

SD Times

SOFTWARE DEVELOPMENT

The Industry Newspaper for Software Development Managers

JANUARY 15, 2002

ISSUE NO. 046

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MICROSOFT SHIPS WINDOWS CE.NET

Adds wireless support, device emulation

BY EDWARD J. CORREIA

At last week's Consumer Electronics Show in Las Vegas, Microsoft Corp. announced the general availability of Windows CE.NET, the latest version of its embedded operating system formerly code-named Talisker. The new release now supports 802.11 and Bluetooth wireless communications, allows device emulation within the development environment, and works with Microsoft's Internet-based Passport authentication service, according to the company.

And while the new version understands SOAP—a key ingredient for compatibility with Web services—developers will have to wait until June for the .NET Compact Framework, the element that will allow them to

use their Visual Studio.NET tools to target the platform with SOAP-based Web services. A preview version of the Compact Framework will be included with the new tools.

Aubrey Edwards, director of Microsoft's Embedded Appliances Platforms Group, said that some of the most promising new features of Windows CE .NET are delivered in Platform Builder, the operating-system image-building tool. "Platform Builder is more device-centric. When you start a new project, you get asked what type of device you are building." Depending on the selection, you get a configuration with operating-system components for that type of device, he said.

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Sybase Looks Past Database Into New Era

Concedes market to IBM, Oracle; will launch development platform

BY DAVID RUBINSTEIN

In what appears to be a shift from its traditional database-centric product strategy, Sybase Inc. next week is expected to announce a new e-business development platform that incorporates much of the integration technology the company acquired with its purchase of New Era of Networks Inc. last April.

"The database war is over," proclaimed Bill Jacobs, director of business process management and monitoring for Sybase, which effectively conceded the market to leaders IBM Corp. and Oracle Corp. Jacobs indicated, however, that Sybase isn't abandoning its core database customers, insisting the company would roll out new initiatives to retain its following. "To grow our company, we needed a complementary business."

The platform—details of

which will be released Jan. 22—follows a general merging of markets within the software industry and reflects a change in customer buying habits, according to Neil McGovern, Sybase's director of business development and strategy. Sybase already has a platform offering in the embedded market, the iAnywhere mobile platform, as well as a J2EE-compliant application server.

"App server companies are sounding like EAI companies. Portals, app servers and EAI are merging into a platform-type offering. IT is moving from internal systems to procurement, sales, supply-chain management systems, CRM," McGovern said. As for the companies purchasing these platforms, "five years ago, CIOs got a lump sum in the beginning of the year to fund

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Apple Supplies 'How,' Lacks 'Why'

Offers support, tools, but few reasons to implement OS X

BY EDWARD J. CORREIA

Since the release last year of Mac OS X, Apple Computer Inc. has been singing the praises of Darwin, the FreeBSD-based kernel of its Unix-based operating system, along with the open-source concept. But aside from providing free developer tools and managing an open-source developer site, the company has done little to provide a compelling message that would inspire developers to flock to its platform.

"We don't want to come out with a heavy-handed message or say we are now the dominant

Unix player in the market, even though by some numbers we are," said Ernie Prabhakar, product line manager for Apple's development platforms. Instead, he said Apple's strategy is to take a relatively humble approach by building grassroots

relationships with a presence at conferences, and by "talking to the decision-makers and helping them see for real what this stuff is."

Mac OS X combines Apple's advanced Aqua GUI—arguably

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COCOBASE DOES EJB 2.0, XMI

BY DAVID RUBINSTEIN

Thought Inc. this week is releasing an update of its CocoBase Enterprise object-relational mapping tool. The new version, 4.0, complies with the EJB 2.0 specification, XML Metadata Interchange 1.1 and UML 1.3, according to the company.

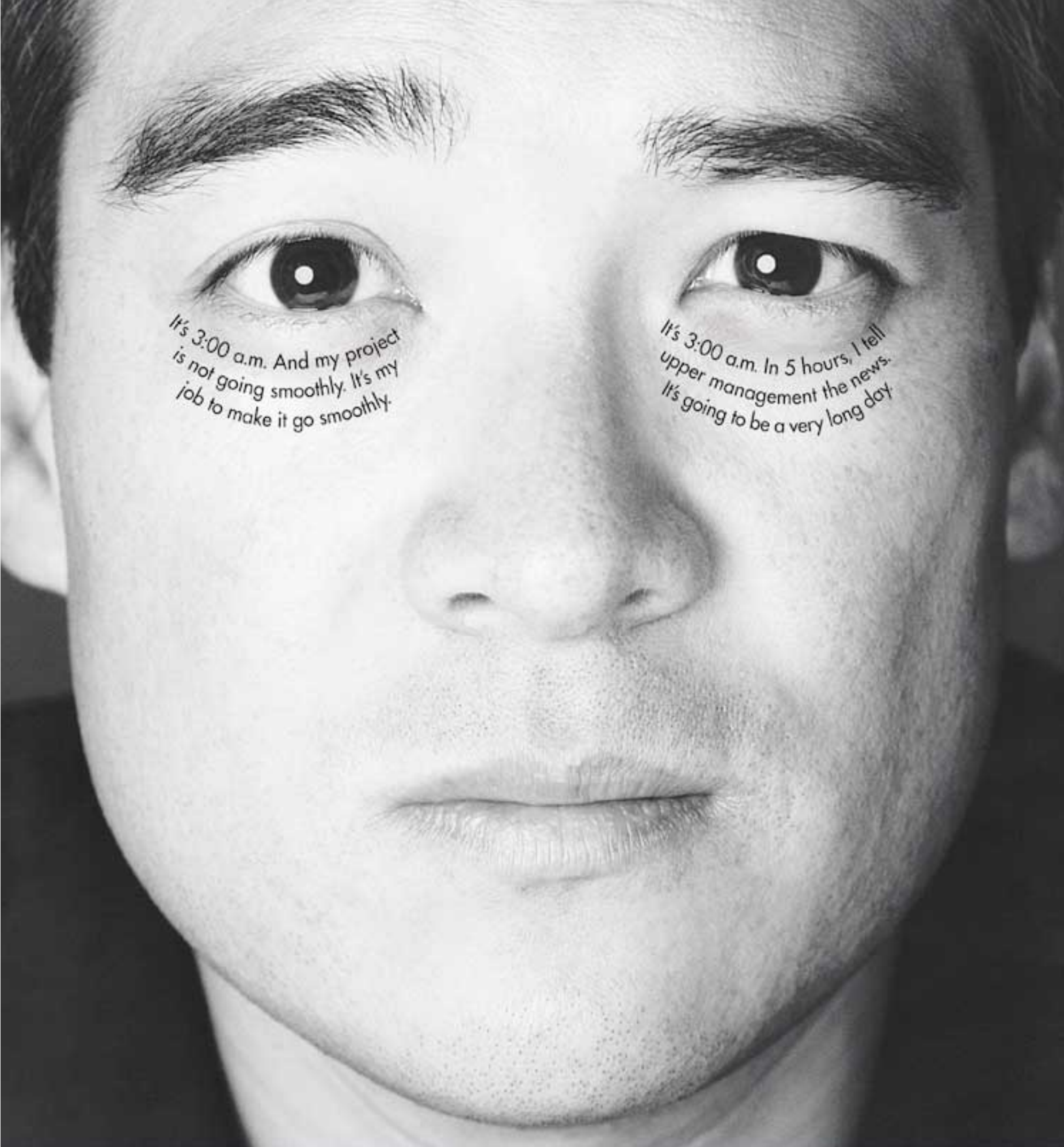
"We can get from concept to deployment in nothing flat," boasted Ward Mullins, CTO at Thought (www.thoughtinc.com). "We can take an abstract model and turn it into a concrete object model in seconds with all the advantages of O-R mapping."

Mullins said the new version of CocoBase includes a generic session bean for wrap-

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Translucent dialog boxes are a hallmark of Apple's Aqua user interface.



*It's 3:00 a.m. And my project
is not going smoothly. It's my
job to make it go smoothly.*

*It's 3:00 a.m. In 5 hours, I tell
upper management the news.
It's going to be a very long day.*

You're responsible for the success of your company's critical business applications. Without the security of stable software products and world-class support, your future may be full of sleepless nights. Next time, choose Rogue Wave® SourcePro™ C++ and get trusted, field-proven components coupled with expert support and services. You'll be secure in the knowledge that your development projects will be delivered on time, on scope and on budget. To find out more about SourcePro C++, visit www.roguewave.com/sleepless.



Rational: MKS Is Off-Base

Responds to claim that code management tool surpasses ClearCase

BY ALAN ZEICHICK

Rational Software Corp. could not let those claims pass without a response: In early December, MKS Inc. boasted that the latest version of its source-code configuration management software offered features far beyond Rational's ClearCase.

Specifically, MKS' Dave Martin, vice president of product development, cited new functionality present in Source Integrity Enterprise Edition (SIEE) 8.2's graphical views, which "goes beyond ClearCase, in that you not only can see the world, but also change the world," he said, such as being able to merge branches of code through drag and drop. (See "MKS Revs Source-Code Management Tools," Dec. 15, 2001, page 3.)

After Martin's comments hit the streets, SD Times received a call from Bill Thornburg, Rational's director of product marketing for ClearCase. "I think [MKS]

is off-base here," he said. "If I understand the claim they're making, they claim that the ability to drag and drop on the graphical view is unique to them. That's capability that's been in ClearCase for years—literally, at least four years. We were flabbergasted by the claim that they were getting way ahead of us."

In fact, said Thornburg, ClearCase's graphical view looked similar to the one published with SD Times' SIEE story, and he sent along a screen capture to demonstrate that.

"Congratulations to MKS for getting out a new release that has a lot of new capabilities in it," added Thornburg. "I think that the significant thing they've done [with SIEE] is the new capability for change sets, which in my mind is a significant advantage for customers. I will mention, however, that change sets are something that we've had in ClearCase for several years also."

Thornburg concluded, "Noth-

ing I see in [SIEE] puts them ahead of ClearCase, but at best it puts them on par in a couple of areas."

When asked about Rational's response, MKS' (www.mks.com) Martin stood by his comments in the Dec. 15 article. "Certainly our graphical view, from a usable viewpoint and all the things you can do within that view, we believe that in spite of what Rational's saying, it's vastly more functional than what ClearCase can offer. Not only can you drag and drop, but it can do virtually every SCM operation. You can use it as a working view."

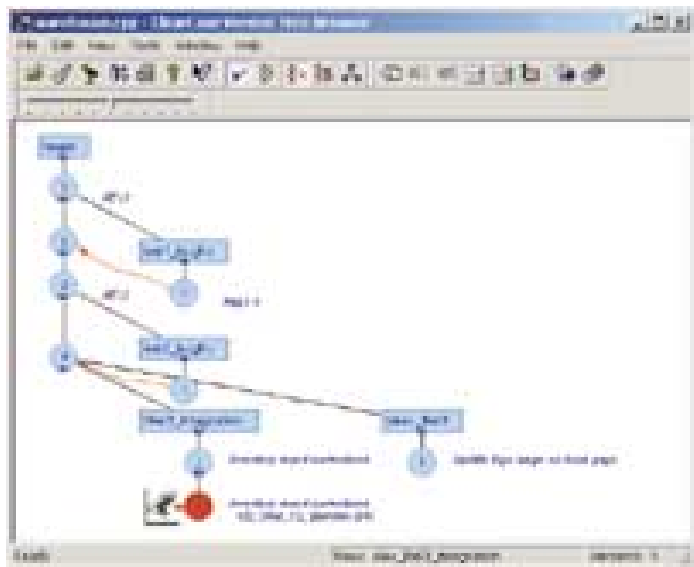
As far as MKS' SIEE's surpassing Rational's product, Martin said, "We've got some ex-ClearCase people here who say yes, that's true. Maybe in their last release [Rational] has made some changes that we're not aware of," he conceded. "We haven't looked at their latest release."

About change sets, Martin said, "I am absolutely not arguing that they didn't have change set technology. My argument is that our change packages are a complete link between our process-and-workflow tool, Integrity Manager, and Source Integrity. You

can actually apply levels of fixes and enhancements on a per-change-package basis."

Martin continued, "Rational will tell you, 'We can do exactly the same thing,' but where does their change set come from? Is it driven by process and workflow in [Rational's] ClearQuest? I think not—it comes from ClearCase. Their change sets are made by developers for developers. Our change package directly correlates to a development task," he explained, saying that this allows it to be linked to part of the development process and driven by a release manager, rather than to specific pieces of source code that only developers know about.

At the end of the day, Martin claimed, it came down to one factor: "The way our product works is more intuitive." ■



Like MKS' SIEE, Rational's ClearCase provides a graphical view of code branches to allow drag and drop of changes.

Computer Associates Gives Advantage To Venerable Data Management Tools

BY DAVID RUBINSTEIN

In its first update of two data transformation and migration tools in nearly two years, Computer Associates International Inc. last month released InfoRefiner 3.3 and InfoTransport 3.3 under the company's new Advantage brand.

The tools—InfoRefiner for moving and manipulating data in mainframe environments, and InfoTransport as a conduit between mainframes and client/server platforms—were acquired by CA when it bought Platinum Software Inc., and haven't been updated since March 1999. When used together, the tools help developers "manipulate data very dramatically," said Bentley Barbour, CA's product manager for enterprise data integration

tools. "We're seeing more use of these and our other data management tools in the client/server environment."

The revised InfoRefiner, Barbour said, offers enhanced data extraction capabilities and support for IMS 7.1 and DB2 for MVS 7.1, while InfoTransport now supports change propagation among such platforms and databases as Windows 2000, Oracle 8.17 and 9i, Sybase and IBM UDB 7.1.

"Making sense out of massive amounts of new e-business data, and effectively integrating it with legacy data to yield optimal information for decision-making, presents a major challenge to IT organizations today," Allen Houpt, CA's Advantage brand manager, said in a statement.

Barbour said that CA has changed its pricing and packaging for the products. InfoRefiner starts at \$150,000 per installation and includes dataset replication, change propagation and full InfoTransport capabilities, plus all available mainframe sources and client/server targets. In the past, CA charged for multiple target and source interfaces. Also, CA is making free the unlimited use of InfoRefiner on client front ends, Barbour added. InfoTransport alone sells for \$90,000 per installation and includes all sources and targets. Barbour also said the products have been more tightly integrated with the company's other enterprise data management and application development tools. ■

PRAMATI TO RELEASE STUDIO IDE, SERVER 3.0

Application server is first to gain J2EE 1.3 certification

BY CHRISTINA M. PURPI

India-based Pramati Technologies is expected this week to release version 3.0 of its Studio development environment and its Pramati Server 3.0, which last month became the first application server to pass Sun Microsystems Inc.'s J2EE 1.3 certification tests.

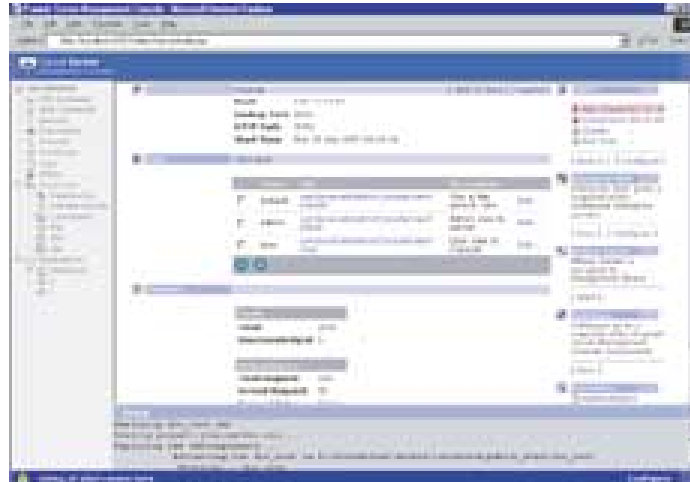
According to Jay Pullur, CEO of Pramati (www.pramati

.com), its application server is designed to support enterprise-class features such as transparent clustering across operating systems. Pullur explained, "A Linux box and an NT box would look like a single big box."

Pramati Studio 3.0 runs on any J2EE-compliant app server and allows developers to debug, deploy and test on its

own local application server. "It's a pure standards-compliant product. Users are going to go away if [vendors] lock them into using their product," said Pullur.

Both products are now in final beta. The server will be priced at \$8,000 per installation, and Studio IDE will come at a cost of \$995 per developer seat. ■



Pramati Server 3.0 offers a Web-enabled server management console.

News Briefs

COMPANIES

Novell Inc. has chosen to promote its NetWare 6 server operating system by refuting **Microsoft Corp.**'s marketing language through a "Why They Lie" campaign; see www.novell.com/products/netware/whytheylie . . . **SuSE Inc.**, maker of a cross-platform Linux distribution, is moving from Oakland, Calif., across the bay to San Francisco . . . The latest version of PERC, a Java Virtual Machine from **New-Monics Inc.**, will run on **Wind River Systems Inc.**'s VxWorks AE operating system on the PowerPC processor. PERC 3.2.1 is expected to ship this month.

PRODUCTS

Iona Technologies Inc.'s **Orbix E2A** Web services integration package is now generally available. The new application combines "end to anywhere" services by bundling Iona's application server with a SOAP, UDDI and WSDL toolkit. Pricing starts at \$495 per development license and \$2,500 per microprocessor deployment license . . . Compoze Software Inc. has released a line of Java components for working with Microsoft Corp.'s Exchange and IBM Corp.'s Lotus Domino groupware servers. The **Harmony Component Suite 2.5** allows Java applications to communicate directly with Exchange's and Domino's e-mail, calendar, tasks lists and discussion groups . . . Jcorporate Ltd. has added new content management features to its Java-based **eContent 2.0** development environment. The new release, which works with Jcorporate's Espresso application framework as well as Apache's Struts, now offers XML-based content management and collaborative development tools. eContent runs on Linux, Mac OS, Unix and Windows . . . SilverStream Software Inc. has released **eXtend JEDDI Server**, its implementation of the UDDI 1.0 specification in Java. The software, which may be downloaded for free from the company's Web site, sets up a local instance of a UDDI business directory. The code runs on SilverStream's app server as well as Apache's Tomcat . . . **InstallShield Developer 7.02**, newly released by InstallShield Software Corp., is designed to interoperate closely with Microsoft



Corp.'s Visual Basic.NET and Visual C#.NET through new project wizards that create dynamic links between the development environment and an InstallShield project. New additions let Visual Studio.NET users work with InstallShield from within Microsoft's IDE. The new version is priced at \$1,199 per developer . . . Software Ltd. has upgraded its software-dis-

tribution tool to make it easier for users to migrate software licenses when they change computers. **Softwrap 3.1** also lets users license multiple applications at one time. The utility is available free of charge, with the company taking a per-sales commission . . . Pervasive Software Inc. is now offering **Service Pack 4** for its Pervasive.SQL 2000i embeddable database engine. The service pack supports Microsoft Corp.'s Windows XP and Novell Inc.'s NetWare 6.0, and features other minor improvements . . . SuSE Inc.'s **Linux Enterprise Server 7** now runs on the Itanium processor, with a version based on kernel 2.4.7, glibc 2.2.4 and XFree86 4.3. The release supports up to 16TB main memory, and includes a logical volume manager, ReiserFS journaling file system and Large File System Support. Pricing starts at \$1,000 per microprocessor . . . The W3C has updated its open-source **Amaya** Web browser and authoring tools. Release 5.3, available for Linux and Windows, can now handle different types of documents simultaneously, and corrects errors in the interpretation of CSS and SVG documents. Amaya can be downloaded from www.w3.org/Amaya . . . Borland Software Corp. has previewed a **Web Services Kit for Java**, which is available as an add-in for its JBuilder development environment. The kit provides SOAP, UDDI and WSDL tools for JBuilder 6, as well as utilities to browse UDDI registries and publish Web services using Apache's Tomcat app server. The pre-release toolkit can be downloaded free of



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ASP Patterns Give Web Interface To Visual Basic Applications

Visible Systems uses modeling, code generation to reduce hand-coding, delivery time

BY DAVID RUBINSTEIN

The Unified Modeling Language, according to Visible Systems Inc.'s John Vosburgh, is great at defining what he called the external face of objects. But to make a model work, he maintains, there is a lot of mundane detail going on inside the objects that UML does not address.

To that end, Visible (www.visible.com) has released a new set of code patterns, for Active Server Pages, to work in its Developer modeling tool, and is working on C++, Java and Visual Studio.NET patterns to help developers move toward true platform independence, said Vosburgh, general manager of the modeling tools division. The current pattern is a Visual Basic 6.0 implementation of a COM+ object; ASP patterns will allow developers to create Web interfaces for their Visual Basic applications. The ASP code patterns became available Jan. 1.

"For business applications, we can do better than UML," he said. The code patterns are meant to be used with Visible Developer 2.6, which Vosburgh described as an object-to-rela-

tional database mapping tool "with other design objects" built in that make it act as a modeling and code-generation tool as well. Developers model a business application and then choose a code pattern, and Developer generates the code to match the model, down to each procedural issue in the code, Vosburgh explained. A business object can be used with any number of front ends depending upon a user's needs; the code can be generated as VBScript or JavaScript without any additional coding, he added.

The thinking behind the code patterns, according to Vosburgh, is that the best way to write systems faster is to write as little code as possible. So much of the code in business applications is done multiple times that if it can be generated automatically and deployed in a number of different ways, the savings in manpower and time-to-market can be huge, Vosburgh said.

Code generation with UML, Vosburgh said, does the shell for the business logic so the rules can be executed at

the right time and in the right way. Visible Developer allows business objects to be defined within the model, and the code patterns transform the model into well-documented code—as much as 90 percent of a typical business application, Vosburgh claimed.

"The 1990s were frenzied to get code out, with GUI-centric design and visually appealing applications created in Visual Basic and PowerBuilder," he said. "They could be put together quickly, but at what expense? The expense is incredible maintenance and technology dependence. We need a technology-neutral approach to software development, and a model-based approach eliminates much of the labor-intensive hand-coding" of applications.

Visible, which released version 2.6 of the Developer tool in September 2001, expects to have version 3.0 ready by the middle of the year, with a richer set of metadata and the ability to create user-defined domains that can be associated with business rules defined in a model, Vosburgh said. ■

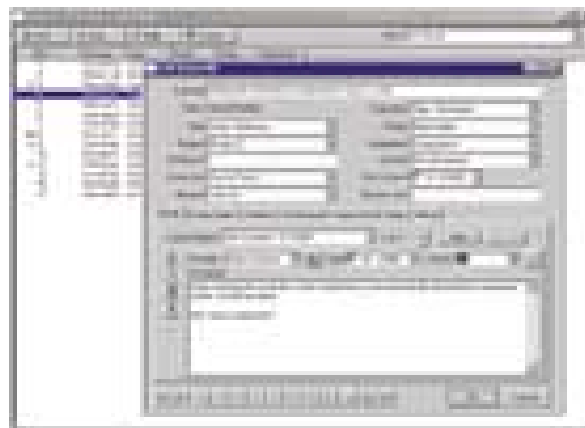
SEAPINE SUPPORTS MAC OS X SERVER, VISUAL C++

Updated defect tracker also works with Perforce, CS-RSC

BY ALAN ZEICHICK

The latest version of TestTrack Pro from Seapine Software Inc. is focused on improving the defect-tracking application's cross-platform abilities.

With version 4.5, released in late December, the defect database server can now be installed onto a Mac OS X server; previously, the server had to be based on Linux, Solaris or Windows, according to the company (www.seapine.com). However, Mac OS X isn't yet directly supported as a native client platform; developers have to be



TestTrack Pro now sports a Web-based interface in addition to its Windows client.

using Windows workstations, or access the TestTrack Pro server via a browser using the new Web-based interface.

Another new cross-platform feature is integration of Test-

Track Pro 4.5 with Microsoft's Visual C++ IDE, as well as new compatibility with Perforce Software Inc.'s P4D and Component Software Inc.'s CS-RSC source-code control systems. The bug tracker already worked with Microsoft Corp.'s Visual SourceSafe and Merant's PVCS.

Available now, Seapine offers Windows client licenses priced at \$209 per user, and floating Windows licenses priced at \$399 per user. Floating Web client licenses are priced at \$299 per user. ■

C#, CLI Clear Low Hurdle

Vendor consortium blesses key Microsoft specifications

BY ALAN ZEICHICK

In late December, ECMA—a vendor consortium formerly known as the European Computer Manufacturers Association—formally approved two .NET specifications submitted by Microsoft Corp. more than a year earlier, in October 2000.

According to Microsoft, the next step for the C# language and Common Language Infrastructure (CLI) APIs will be ISO, the International Organization for Standardization (www.iso.org), which has a “fast track” agreement with groups like ECMA (www.ecma.ch). SD Times talked to Steven Lees, a product manager for developer tools at Microsoft, about ECMA’s recent actions and what they

mean for the company and its customers.

SD Times: What’s been happening since Microsoft submitted the specs to ECMA?

Steven Lees: There has been an ongoing process of technical review by two technical working groups, one for C#, one for Common Language Infrastructure. A bunch of companies, including Microsoft and the other sponsor companies, Intel and Hewlett-Packard, and a number of other ECMA member companies, did a very thorough review, which resulted in those groups signing off on the specs. The culmina-

tion of all that was the ECMA General Assembly meeting to approve C# and the CLI as ECMA standards.

In addition, the General Assembly voted to submit these specifications to ISO as part of the fast-track process.

So ECMA submits the specifications to ISO, not Microsoft?

That’s something that ECMA does.

What’s your expectation on how long the ISO process will be?

I’m not sure, but I’ve heard that it takes about 12 to 18 months.

There’s a standard process that ISO goes through, and that takes a certain amount of time.



ISO approval could take 12 to 18 months, says Microsoft’s Lees.

In the technical reviews, did the ECMA members make any changes to either specification, or did they just sign off on Microsoft’s submissions?

No, actually, there were a lot of changes. Most of them are things I would characterize as fairly small, technical details, such as inconsistencies or minor flaws. Because of the level of review that the specs underwent, the groups caught a lot of that stuff.

Is a list of changes from the original submission available?

It would be difficult to compile a list [of changes] because a lot of it happened at the working-group level. I don’t know how carefully they preserved records of the changes they made. But for one example,

one of the CLI specifications is for a data type called decimal. There were some changes made in the way that text strings are converted to decimal, and vice versa—that kind of level of change. There were also changes in the way some of the C# syntax was described.

Are the versions of the CLI and C# that are in the first release of Visual Studio.NET and the .NET Framework going to match the original Microsoft versions or the revised ECMA versions?

Basically, yes [laughing], as it’s pretty much the same thing. Because of the number of changes that were made, I can’t absolutely guarantee that the Microsoft product will meet the ECMA specifications to the letter, but they’re very close.

But we can assume that Microsoft is committed to bringing the products in line with the specs?

Definitely.

What Microsoft submitted as

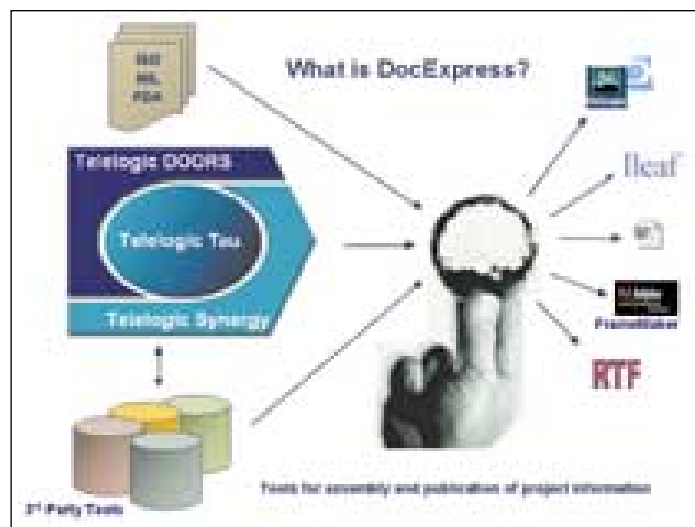
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Telelogic Adds XML Links to Documentation Tool

BY CHRISTINA M. PURPI

Telelogic AB recently upgraded its DocExpress automated reporting and documentation tool to include XML links and tighter integration with other Telelogic products.

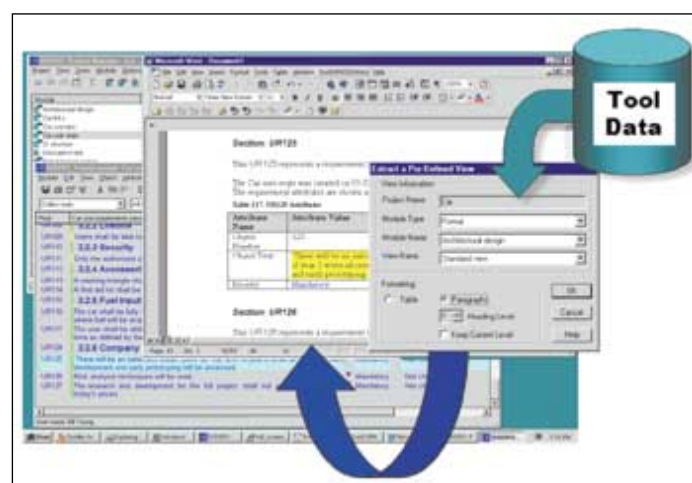
According to Cliff Sadler, product marketing manager of Telelogic (www.telelogic.com), DocExpress 3.0.1 was originally planned as a maintenance release; however, eventually more features and functionality were added. With this release, he said, any XML file can now be included in documents by taking data and applying formatting as the data is imported. The new release also works with DOORS, Telelogic’s requirements management tool;



Adobe’s FrameMaker; and Microsoft’s Word XP. It also includes a link to CM Synergy, Telelogic’s configuration man-

agement tool, which was added to ease the production of presentations and status reports.

DocExpress comes in two



DocExpress, now integrated with other Telelogic products, can take data from third-party tools via XML and create Microsoft Word documents.

versions: DocExpress/Word, which creates and maintains technical documentation for Microsoft Word users; and DocExpress/Factory, which automatically generates documents

directly from information contained in third-party tools.

The Windows-based DocExpress 3.0.1 is priced at \$3,000 for the Word version and \$8,000 for the Factory version. ■

Sun Updates J2EE Blueprints

BY DAVID RUBINSTEIN

Sun Microsystems Inc. has updated its Java Pet Store reference application to illustrate the new features of the J2EE 1.3 specification. The Pet Store is part of Sun’s Java Blueprints for Enterprise program (http://java.sun.com/blueprints), designed to help developers understand new

Java technologies.

It is the first reference application to show examples of the Enterprise JavaBeans 2.0 specification, Sun’s Web application framework, message-driven beans and asynchronous messaging as outlined in the Java Message Service, according to Larry Freeman, Sun’s Java Blueprints team manager.

Sun was not able to include an example of the Java Connector Architecture, Freeman admitted, echoing comments made by Java users that the JCA was not quite production-ready even though it is included in the 1.3 specification.

“There’s a lot of detail here,” Freeman said. “A developer can focus on what he wants [from J2EE], but the full features are available if you want them.” ■

SYBASE

◀ continued from page 1

initiatives. Now, CIOs get a ‘keeping-the-lights-on’ budget that doesn’t cover programmers or new hardware or software,” McGovern said.

“Companies,” he continued, “are receiving funding at the project level rather than initia-

tive, multiyear funding. We are seeing focused, ROI-driven projects. While there are some marquis accounts,” which he defined as companies buying the whole of IBM’s WebSphere or BEA’s WebLogic, “those huge deals are the exception rather than the rule. Customers are not buying platforms in toto, but they want pieces of the technology.” ■

News Briefs

MORE PRODUCTS

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charge from www.borland.com/jbuilder/webservices . . . Business Objects SA's new **Developer Suite 5.5** provides tools for building business logic components with JASP, ASP and Visual Basic for Applications. The new version exposes a J2EE-compatible API, and includes an enhanced Java interface and a new SDK for building



reports . . . Fiorano Software Inc. shipped **Tifosi**, a utility that allows dynamic provisioning of network routes between distributed software services. Tifosi, which includes the FioranoMQ JMS server, combines XML and

SOAP-based Web services to let developers design components, join components with business processes, and deploy them across a network . . . Microsoft Corp. released a **patch for a major security flaw** in its Windows XP and Windows Me operating systems, and which also affects users of Windows XP's Internet Connection Sharing client in Windows 98. The patch corrects a fault caused by an unchecked buffer in Universal Plug and Play. The Windows XP patch is at www.microsoft.com/Downloads/Release.asp?ReleaseID=34951; for other versions, go to www.windowsupdate.com . . . The first version of Sun Microsystems Inc.'s **Java XML Pack** includes prerelease versions of the Java APIs for XML Messaging (JAXM) 1.0.1, XML Processing (JAXP) 1.2, XML Registries (JAXR) 1.0 and XML-based RPC (JAX-RPC) 1.0. A future release will include the Java Architecture for XML Binding. The pack can be downloaded from <http://java.sun.com/xml/downloads/javaxmlpack.html> . . . Versata Inc. is making available its process logic engine, **Versata Interaction Server 5.5**, for independent software vendors. VIS 5.5, which the company says has gained ground among enterprise application integration vendors building for the Java platforms, includes a logic designer that allows developers to graphically specify process requirements without having to write Java code to program the engine.

PEOPLE

VA Software Corp. has added **David Wright** to its board of directors. Wright is currently CEO of Legato Systems Inc., and previously worked at Amdahl Corp. . . . **Jonathan Sawyer** has joined SD Times as sales manager for the Southeastern U.S. and Europe. Sawyer most recently served as a regional sales manager of CMP Media LLC's Intelligent Enterprise and as advertising director for MSDN Magazine.

STANDARDS

Hewlett-Packard Co. and SAP AG have pledged their support for IBM Corp.'s **UDDI4J** specification, which provides a common Java API for registering and querying Web services in UDDI-based registries. IBM released UDDI4J as open source in January 2001; IBM and HP collaborated on UDDI4J version 2, which went into beta last November . . . The XBRL.org Consortium has completed the second version of its XML-based schema for accounting and business reporting. The **Extensible Business**



Reporting Language 2.0 is intended for use in reporting information such as financial statements . . . The **Java Community Process** has released public drafts of its specifications for J2EE management, J2EE application deployment, and Java APIs for XML-based remote procedure calls . . . The W3C has released several document drafts, including the first Working Draft of **XSL Transformation 2.0**; interim Working Draft of **Character Model for the World Wide Web 1.0**; Working Drafts of **XML Query Language (Xquery) 1.0** and **XML Path Language (XPath) 2.0**; and the first Working Draft of **CSS TV 1.0**, a subset of Cascading Style Sheets geared toward displaying Web content on televisions . . . The organization also released new documentation for **SOAP 1.2**, including a new primer on the specification . . . Finally, the W3C released as an official Recommendation **WebCGM**, a profile of the ISO's Computer Graphics Metafile format for Web-based documents. ■

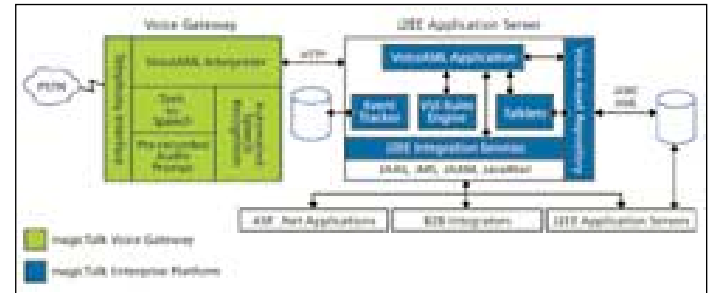
General Magic Talks to Java Web Developers

BY CHRISTINA M. PURPI

General Magic Inc. is shipping its first version of magicTalk Enterprise Edition, a software suite designed for Java Web developers to create voice applications.

Features of version 1.0 include a VoiceXML development tool, based on extensions to Macromedia's Dreamweaver UltraDev 4, that builds a user interface to authoring tools that allows for creation of voice-enabled Web applications by pointing and clicking at a set of reusable components. According to Paula Skokowski, vice president of marketing of General Magic (www.generalmagic.com), magicTalk also includes talklets, which are reusable components for functions such as retrieving account and flight numbers.

Included in the suite is a



magicTalk Enterprise Edition allows voice-enabling of Web applications.

voice asset repository already loaded with more than 6,000 prerecorded prompts, grammars and VoiceXML and JSP scripts that organize, deploy, search, manage and retrieve content. The magicTalk platform also includes a virtual telephony client that uses a PC microphone and speakers for testing and debugging VoiceXML scripts.

Available now, the Enterprise Edition is packaged with

the Jboss application server and runs on BEA's WebLogic and IBM's WebSphere applications servers. Pricing for voice application development, testing and deployment for a typical, medium-sized system including four CPUs and 48 telephony ports is approximately \$450,000; individual developers can test out the development software at no charge from the magicTalk Web site, according to Skokowski. ■

C#, CLI

< continued from page 5

the CLI to ECMA is a small subset of the Common Language Runtime. Can anyone actually do anything with the CLI specification? Could they reconstruct the CLR?

They couldn't, because there's a lot more stuff in the CLR. Remember, when we say "CLR," we mean Microsoft's product implementation [of the CLI]. What's not in the CLI falls into two major categories. First, the whole purpose of the CLI was to have a platform-independent, vendor-independent spec. Neither Microsoft nor the technical working groups wanted any platform-dependent stuff in the spec. There's a lot in the Microsoft CLR product to let you interact with Windows, because that's what customers really want.

And what Microsoft really wants, too.

Well, yes. Things like COM interoperability, the Windows Forms package, aren't in the CLI specification. That's one major category. The second is that the technical groups wanted to take on work that they could realistically accomplish. So, they tried to isolate what they saw as the core pieces of the CLI, basically enough to get someone up and running with an execution engine, with core data types—

basically the pieces you'd need to write a simple Web services application. When you ask, "What can I do if I were to implement the CLI?" the answer is that you'd have enough to run a simple Web services application.

If I have another operating system, and wanted to create a runtime for the CLI, it would be pretty minimal. You're really expecting people using C# and the CLI to run it on Microsoft's implementation.

I certainly hope that lots of people do that, yes.

Do you expect there to be any third-party implementations? Granted, standardization is a good PR move and a poke in the eye to Sun, because the CLI will probably be standardized by ISO and the Java Virtual Machine specifications won't be. But is that of any practical value whatsoever?

Just to be clear: There was a lot of serious technical work that went on at ECMA working groups. Really, the specs underwent a very thorough review, and there is value in that for customers who are trying to decide if .NET is solid.

About someone else building implementations of the CLI: There is interest, but I don't know specifically of anybody who has announced that they have them. But [ECMA approval] enables that to happen, and also gives everyone a very thoroughly peer-

reviewed set of specifications to work with.

Wasn't Microsoft going to release the source code for a CLI specification that could be used to port to other operating systems?

We announced that last summer, and the plan is for the code to be released in the first half [of 2002]. We call it the Shared Source CLI Implementation. We're creating code based on the CLI and C# specifications from ECMA, with source that we can hand out to customers for noncommercial purposes. It's aimed at researchers and educators, so they can see practically how you would build a system based on those specs. But anyone, including companies, can take it, too, and do what they like, as long as it's for noncommercial purposes.

Do you expect there to be commercial implementations based on it?

No, companies couldn't take that Shared Source implementation and build off of it, no. They can use it as an educational tool, however.

What about Sun? They're an ECMA member. What was their involvement in the process?

They were lightly involved. They attended some of the meetings.

And didn't Sun and Apple abstain on the ECMA vote? Any official Microsoft comment on that?

None [laughing]. ■

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Meetings
Changes
Chaos
Changes

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be liberated

FMS Adds SQL Statistics to Visual Basic

BY ALAN ZEICHICK

FMS Inc., which sells add-ons and components for Microsoft Corp.'s database and Visual Basic development tools, has just released a statistics package for SQL developers.

The new Total SQL Statistics, which works with either Visual Basic 6 or the soon-to-be-released Visual Basic.NET, lets developers incorporate statistical analysis directly into

the applications, rather than exporting data to a third-party application for that purpose.

According to the company, the component can directly calculate percentiles, frequency distributions, t-tests, confident intervals, regressions, correlations, ANOVA tests, Chi-square and other functions. The tests are run against SQL Server 7 or SQL Server 2000 databases.

Total SQL Statistics is priced at \$999 for a single-seat license, or \$2,999 for five developer seats. There are no royalties for distribution of applications built using the component.

The statistics component can also run in conjunction with another recently released tool, FMS' Total SQL Analyzer, which is a stand-alone application that probes SQL

Server databases for consistency errors and also produces summary reports about the databases' content, including documentation on the properties of each database object. According to the company, the analyzer is targeted at developers who inherit projects and need to quickly understand exactly what's in the databases. The utility, which runs on a workstation

connected over a network to the SQL Server database, is priced at \$499 per user.

FMS (www.fmsinc.com) has also introduced a new component aimed at spell-checking Microsoft's Access data-entry screens, tables, queries, forms and reports. The add-in works with MDB and MDA Jet databases, but not with ADP or SQL Server projects, and is priced at \$199 per developer. ■

COCOBASE

< continued from page 1

ping classes to be deployed on an EJB server without having to generate custom EJBs for every class. "That's one of the big complaints of EJBs," he said. In effect, Mullins said, CocoBase becomes a persistence service. "The whole complexity of the persistence code goes right out the window," he added.

CocoBase provides Container Managed Persistence (CMP), Bean Managed Persis-

tence, sessions beans, JavaServer Pages and servlets; in conjunction with the CocoBase runtime, objects are persisted without requiring JDBC and SQL calls.

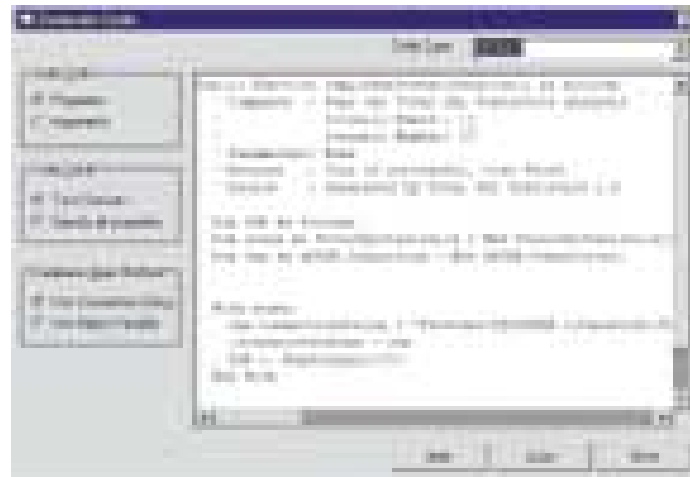
"We've had to educate customers on the difference between object mapping and object persistence," Mullins said. "We don't consider baseline object persistence as mapping."

The new version's use of XMI and UML gives users a broad base of modeling tools to choose from and lets CocoBase

accept data from almost any format, Mullins said.

CocoBase is priced at \$5,000 per developer and includes one year of support and maintenance; CMP costs an additional \$1,000 per developer, Mullins said.

According to Mullins, CocoBase is now integrated with Hewlett-Packard's HP-AS application server, IBM's WebSphere 4.0 and Sybase's EA Server 4 application servers, joining a long list of J2EE-compliant app servers already supported. ■



FMS' Total SQL Statistics lets Visual Basic developers generate statistics from SQL Server databases from within their applications.

AS DAWN BROKE, CODY REALIZED HE WAS ILL-EQUIPPED...

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APPLE

◀ continued from page 1

one of the easiest and most intuitive—with BSD Unix, Java and legacy Mac OS emulation, giving developers a flexible environment for building fine-looking applications that can take advantage of the performance and protections for memory afforded by Unix. As one Apple executive claimed, such an environment has long been Unix's Holy Grail—and has eluded all who have come before, including Apple founder Steven Jobs.

"Apple has achieved with OS X what the Unix community has been dreaming about forever," said Brian Croll, Apple's senior director of software. "There's been a couple of runs at that, [such as] Sun's OpenLook and SunWin before that, and [Jobs'] NextStep. What's interesting with OS X right now is the Apple installed base of about 25 million, which is the high volume that the Unix world has always been looking for to get developers excited about using Unix."

But despite such radical advances, Croll admitted that Apple has been unable to

quickly spread the word among developers. "It's pretty common to find people who didn't know that OS X is based on Unix," said Croll. "People are unaware of what we have in OS X, especially in the Unix [and] Java communities."

And according to Croll, gaining developer acceptance is critical to Apple's success. "Developers always lead the pack. If you go back and look at what platforms are hot, it's where the developers have mind share, and that's always the leading indicator of what's going to happen later," he said.

"There is a coolness factor that draws people to get a Mac," asserted Prabhakar. "So many developers tell me, 'My company isn't committed to the Mac, but I have bought a Mac because it is so cool to have a Titanium G4 that runs Unix, Java and a great UI, and I am porting our application in my spare time.' It's also a great value proposition on the cost side; it's easy to get [your code] to Mac OS X. If you have Mac code, it comes over via Carbon. If you have Unix code, it comes over via Darwin. Java code comes without having to do

anything," he said. Carbon is an emulation environment for running legacy Mac OS applications.

But being easy is no guarantee that something will get done. Al Gillen, research manager of systems software with International Data Corp., said, "Apple has something really interesting here, but the problem they face is that most of the applications developed for desktop Unix are not necessarily those you would run on a Macintosh; they are generally highly technical applications" that execute on big hardware.

Apple's Croll disagreed. "If you look at where the Unix installed base is today," he said, "it's in scientific, technical, entertainment and design environments." Prabhakar added, "For many years, the default environment for most scientists and researchers was having a Mac on one side of their desk and a Unix box on the other. And in the federal [government] space, it's becoming huge because of the interest in open systems, open source and standards."

Still, Gillen believes that Apple's Unix-based operating system is interesting, but that

MAC OS X DEVELOPER WEB SITES

www.opensource.apple.com

By Apple Computer Corp.

Download Darwin source code, development tools, projects and information.

www.darwininfo.org

By open-source developers Tom Hackett and Rob Braun

Darwin information portal with links to projects and other useful sites, mailing lists and an unofficial FAQ.

www.sourceforge.net

By Open Source Development Network (subsidiary of VA Software Corp.)

Open-source developer collaboration site and code repository containing a multitude of Darwin projects.

any hoped-for inroads in the enterprise may be challenged by advances in Linux. "The Linux desktop has been coming along, and it looks and feels a lot like Unix" and has the advantage of running on just about any hardware, he said. "But the Mac OS is far more advanced than Linux and has a much more compelling set of applications."

Prabhakar speculated that the release of Microsoft's resource-hungry Windows XP also might nudge developers to change to Apple hardware. "All of the articles I've read said that in order to [install] Windows XP, you have to buy all new

hardware anyway, so you may as well buy hardware that will run better," he said.

"It's probably true," said IDC's Gillen, "but there's more to it than that. The hardware [to run Windows XP] is not all that expensive, and you've got all the software applications you've invested in. With XP, generally [the apps] will move forward without too much of a problem." But switching to Mac OS X means buying all new programs, he said. Gillen added that for Apple to create a truly compelling platform, it needs to find a way to attract Windows developers. ■

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MontaVista Tips Its Hat

Company to update, rename its embedded Linux

BY EDWARD J. CORREIA

MontaVista Software Inc. later this month will unveil the newest version of its soon-to-be-renamed embedded Linux distribution that the company claims will offer real-time kernel pre-emption capabilities for MIPS, PowerPC and SH processors, and incorporate the KDevelop open-source development environment. The company says it will demonstrate the product at the LinuxWorld Conference and Expo in New York and begin shipping it in March.

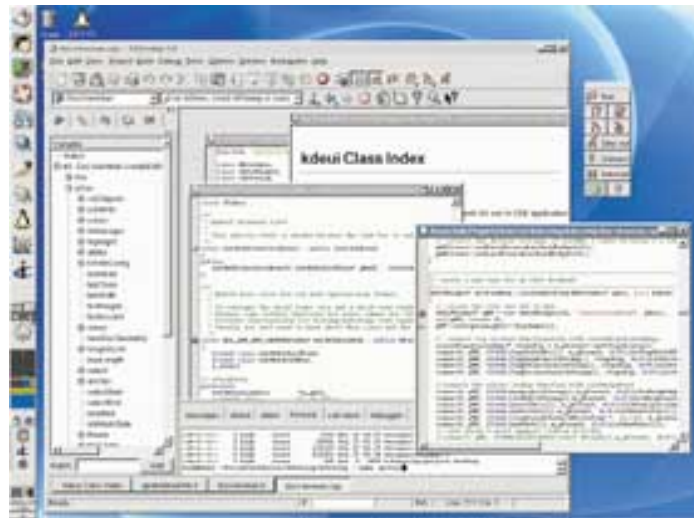
Version 2.1 of what had been called Hard Hat Linux also will bring the distribution up to date

with the Linux 2.4.17 kernel, which according to Jacob Lehrbaum, product marketing manager of MontaVista's operating system and development environments, was chosen less for its new features and more for its stability, particularly for the virtual memory model. "The issue was that a lot of people didn't feel that something like that should go into a stable branch; it should have been first put into a development branch. [But] everyone is in agreement that it is the best virtual memory, and we feel it's pretty stable now," he said.

The most visible change to version 2.1 will be to the IDE.

MontaVista will now include KDevelop, an open-source IDE project started in 1998. "It's one of the best choices out there of IDEs designed to work with Linux," Lehrbaum asserted. "It's very similar to Microsoft Visual C++, so we feel it would be comfortable to a lot of users," he added.

Starting with version 2.0, MontaVista stopped offering the Code Crusader IDE with Hard Hat Linux because its maker, New Planet Software Inc., stopped offering it as open-source software. Although it was troubling to the company (www.mvista.com) at first,



The KDevelop IDE replaces Code Crusader, which is no longer open source.

Lehrbaum characterized the move as a blessing in disguise. "As it turns out, KDevelop is way better," offers more features and has a more finished appearance, he said.

Version 2.1 also supports the EXT3 journal filing system, Linux trace tools for PowerPC and x86 processors, and Tiny HTTP, a small-footprint alternative to the Apache HTTP server. ■

WINDOWS CE.NET

← continued from page 1

Another major improvement, Edwards continued, is in device emulation. "Rather than having to download an [image] to target hardware, you can emulate it in software and test capabilities without your target hardware."

According to Edwards, Microsoft also has made it easier for developers to gain access to Windows CE source code and has increased the amount of visible code, including Bluetooth, the HTTP server and USB and Microsoft Message Queuing modules, he said. Changes to source code are still prohibited according to the Microsoft license, however.

An important new feature, according to Craig Kulfan, director of software engineering at Icebox LLC, a Web-based entertainment company, was the inclusion of Microsoft's Media Player 8.0 and Internet Explorer 5.5. Icebox, which produces original animated content for delivery over the Internet, also builds an Internet-enabled entertainment appliance for the kitchen that allows people to view its content, play CDs and DVDs, and surf the Web.

Icebox's first-generation product was based on the VxWorks operating system from Wind River Systems Inc. And while the company (www.iceboxllc.com) was able to bring that product to market after about a year of development, Kulfan said that when it came to adding features or applications, VxWorks left them hog-tied. "It's been

available for about six months, and during that time we have not been able to roll out any additional features," he said.

Kulfan said the company would not make that mistake with version two. "When looking at our second-generation product, we threw everything out that we knew before because we recognized that we had to be able to innovate quickly" in whatever new operating environment was selected. After considering embedded Linux, VxWorks and Windows CE.NET, Icebox settled on the latter. "CE.NET allows us to more quickly develop Web-enabled products," Kulfan said that he hopes to roll out new products or features roughly every six months. "What we've got is light years ahead of what we started with when we worked with VxWorks."

Developers should beware of Platform Builder's substantial workstation requirements, including 12GB hard-drive space for a full installation (1.7GB for a minimum install), and 192MB RAM if device emulation is required (128MB otherwise). Windows 2000 Professional with Service Pack 2 or Windows XP Professional also are required for the development station.

Platform Builder costs \$995 per developer through March 7. After that, it will sell for \$2,995. A fully functional version is available for free at www.microsoft.com/windows/embedded/ce and will last 120 days. The software can target ARM, MIPS, SuperH and x86 designs. ■

TimeSys Unlocks Linux Under GPL

BY EDWARD J. CORREIA

Embedded Linux and Java developer TimeSys Corp. has released Linux GPL, a version of its high-performance Linux distribution for embedded applications that the company claims offers a new fixed-priority scheduler and the lowest latency of any Linux version available. The software is available now under the GNU Public License.

According to the company, Linux GPL is a complete distribution, including all libraries, tools and drivers necessary to build devices based on six board designs commonly found in industrial control, automotive, aerospace and telecommunications industries. Linux GPL

offers bounded, mutex-based kernel locking with its new scheduler, and developers also can control interrupt handling priorities and schedule extended handlers, including the IP stack, the company says.

The release marks a shift in strategy for TimeSys. The company in the past has sold its Linux distribution only when bundled with its proprietary Linux real-time extensions. TimeSys president and CEO Larry Weidman said the change marks two key milestones in the embedded industry. "We've made it easier for developers to accelerate the design and analysis process while also providing higher assurances that

systems will be more flexible and reliable under demanding circumstances."

TimeSys will continue to develop and bundle its real-time proprietary extensions for sale with Linux, which permit developers to add hard real time to systems and control CPU and network availability. "Before, customers had to choose between true real-time functionality and Linux. Now they can have both."

Linux GPL is available now at www.timesys.com for six designs based on ARM, Pentium, PowerPC and SuperH processors. Additional targets are promised for release early this year. ■

SUN UNCORKS JINI 1.2 STARTER KIT

BY EDWARD J. CORREIA

Sun Microsystems Inc. has released the Jini Technology Starter Kit 1.2, the latest version of its Java-based tools that it claims lets developers build Jini clients and services that are faster, more reliable and can access multiple networks simultaneously.

Jini provides an infrastructure for devices to appear on a network and spontaneously interoperate. The specification describes ways of giving network clients and services the ability to find each other on a network and work together using widely adopted network-

ing technologies, including RMI, CORBA and SOAP. Clients joining a network advertise their existence and the services they provide, and publish an API object describing how other devices can make use of the services they offer.

According to Sun, features in Starter Kit 1.2 permit multiple services to be deployed on a single virtual machine, allowing services to share memory, thereby reducing device resource requirements. Also new is multithreading capability, which has been added to look-up and service discovery utilities, and to join and lease man-

agement utilities, allowing them to execute their tasks in parallel, which the company says improves device performance and reliability. The kit also for the first time gives developers control over network selection when more than a single network is available to a device.

The company also released a corresponding version of its Core Platform Compatibility Kit, to permit developers to verify compliance of their Jini code to the new specifications. Both are free and available now at www.sun.com/software/communitysource/jini/download.html. ■

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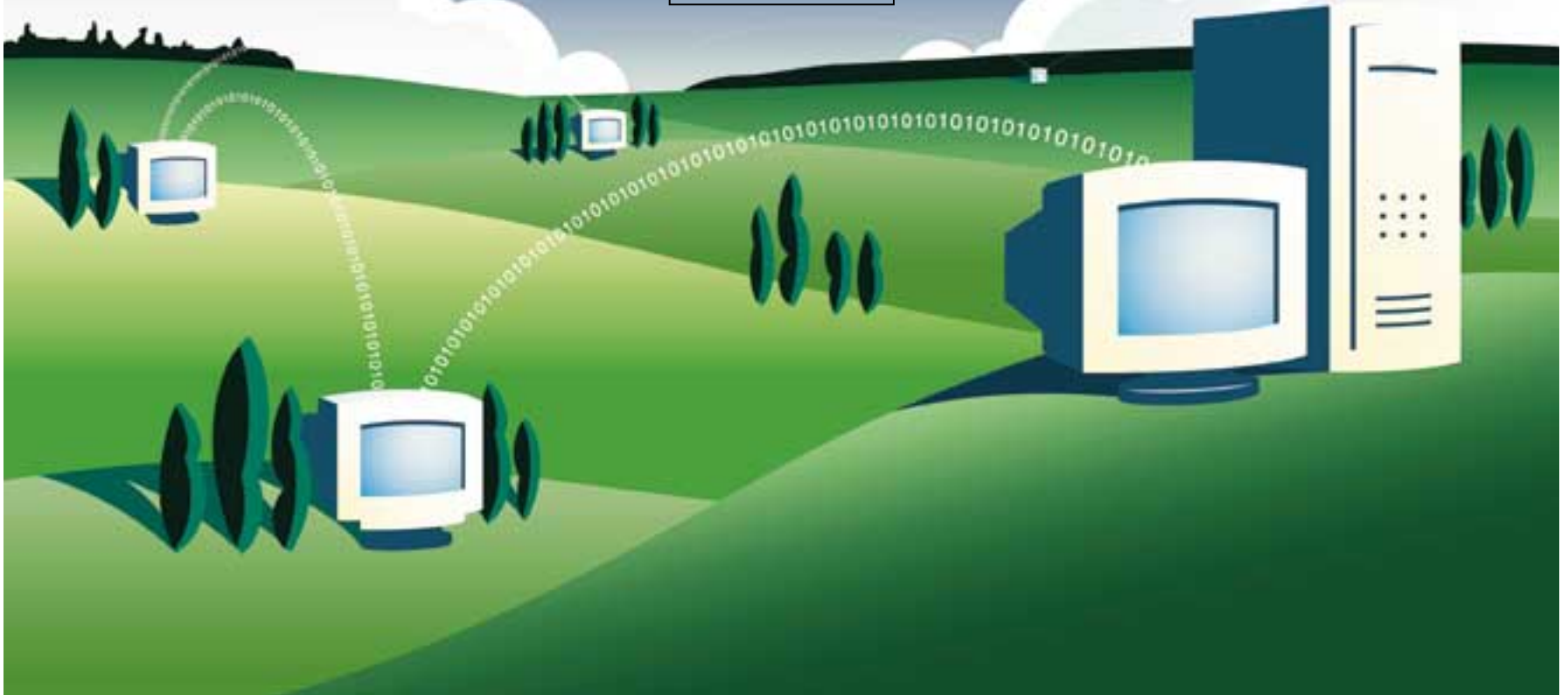
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The State of Middleware

Java messaging, adapters gain momentum

BY ANDREW BINSTOCK



Messaging middleware has undergone a stunning transformation in perception during the past five years. In the mid-1990s, middleware was still viewed very much as the province of mainframe shops that needed a plumbing layer to provide messaging between the back-room big iron and front-end applications.

This perception was furthered by the dominant role of IBM Corp.'s MQSeries middleware, which undeniably started out as a mainframe messaging layer. With the advent of Web technologies, companies discovered that the most significant impact on their enterprise infrastructure was the abrupt and radical shift to distributed architectures. The once-standard client/server model of multiple clients feeding into a business-logic server that spoke with several back-end databases was completely shattered.

In its place, a legion of dedicated, stand-alone servers took over transaction processing as a series of disjointed activities. For example, the modern enterprise with a Web presence now must support Web servers, firewalls, authentication and encryption servers, application servers, database servers and perhaps EAI servers and ERP systems. To these may well be added directory servers, WAP servers, file

servers and more. The bottom line is that enterprises today are forced to deal with moving data at high speeds among a widely distributed set of servers that need to understand one another's data. Enter messaging middleware.

Suddenly, after years of rendering rock-solid service in quiet obscurity, middleware is hot and can be divided roughly into two camps: Java-based middleware and everything else.

JMS: COMING ON STRONG

As of last year, the big news was the impending widespread adoption of the Java Message Service (JMS), which was expected to drive down prices as various vendors started shipping competing implementations. In addition, JMS would do away with the single biggest problem in messaging middleware: its tendency to lock customer sites into one product's API. Customers who chose one vendor's solution were locked into that product because the customers' applications all had been rewritten to use the middleware APIs. By being forced to standardize on the JMS APIs, middleware vendors would now compete purely on implementation, and dissatisfied customers could with some effort swap in a better product without having to change their codebases.

Today, it is clear that JMS delivered on these promises, as good JMS implementations can be bought at prices unimaginable just a few years ago. In fact, there are several free versions of JMS available, both commercial and open source. When you take that into account, middleware has never been less expensive.

JMS also cracked open the API issue. All middleware vendors as of late 2001 have JMS APIs associated with their

products. The last major vendor to succumb was TIBCO Software Inc. (www.tibco.com), which only just released its JMS implementation. At mid-year, IBM released WebSphere 4.0, which was its first certifiably approved J2EE implementation; this version included a JMS implementation consisting of JMS wrappers around an MQSeries core. In fact, IBM is currently renaming MQSeries as WebSphere MQ.

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WHATEVER HAPPENED TO CORBA?

The Common Object Request Broker Architecture dates to the late 1980s. It was established as one of the first scalable standards for locating and invoking objects across the enterprise. CORBA enjoyed two roles in the enterprise: as middleware between two servers for small distributed applications, and as a middleware bus. Its adoption, however, was rarely enthusiastic.

As Mike Foody, CEO of Venture Imperatives, pointed out, "CORBA started off as a complex technology that wanted to be the end-all of enterprise infrastructure. This approach rarely works. Technologies have to start out simply, like Web services. Then they have to grow and add features in response to customer needs."

And indeed CORBA was difficult to install because of its complexity and the fact that different implementations were less than entirely interoperable. As a result, when alternatives began to appear in the form of J2EE technologies and Web services, CORBA quickly became a legacy system. It endures today in two niches. First, in companies where the developers are building a completely customized solution, CORBA brings a great deal of functionality right out of the box. Second, it continues to find favor in real-time transaction environments, where fast request-reply turnaround is necessary.

—Andrew Binstock

MIDDLEWARE

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The high hopes placed on JMS tempted numerous vendors to enter the market with stand-alone products. The two most visible vendors were Sonic Software Corp. (www.sonicsoftware.com) and Fiorano Soft-

ware Inc. A year ago, these two companies battled each other relentlessly with claims of performance supremacy, allegations of benchmark dishonesty and other intriguing accusations. This hissing match died out eventually as it became clear that other vendors entering the market also had fast implementa-

tions of JMS technology.

What ultimately sobered both brawlers was the stark realization that even though JMS was in fact delivering everything it promised, the market for stand-alone JMS products simply was never going to appear.

Instead, existing middle-

ware vendors added JMS interfaces to their products when pressured by their customers, and lowered the prices as needed to close sales. JMS became a check-list item in a series of needed features, rather than a stand-alone product.

Certainly, few IT sites tore out existing middleware to

install JMS. Stand-alone JMS implementations did have one hope, however, because the middleware market continues to labor in the shadow of one very strange aspect: The biggest installed competitor to any new middleware product is what is affectionately called "home-grown" solutions.

In fact, middleware vendors informally estimate that one-third to one-half of all sites with middleware today use products that were developed in-house—generally in response to a small problem, from which it slowly permeated all applications in the company. On the surface, this factor would seem to provide JMS-specific vendors with an opportunity. But in fact, this has not been the case. Large corporations that have been replacing home-grown solutions have first turned to established large-scale messaging products. Meaning they have turned to the market leader, IBM's MQSeries, which by some estimates (such as those from Wintergreen Research Inc.) show the company with as much as 75 percent market share.

Fiorano (www.fiorano.com) and Sonic simply don't have the marketing oomph to either get the lead for the sale or to credibly go up against IBM when they get it. As a result, they are forced into other byways, such as special projects that require an ad hoc middleware solution. This includes the Sabre airlines reservation project, which uses Sonic's JMS and the JNET Criminal Tracking system, developed by the Pennsylvania Department of Justice, which uses Fiorano's product.

Other middleware companies such as Talarian Corp. (www.talarian.com) likewise bet heavily on JMS. Talarian, which is known for very high-speed messaging used in defense and financial services markets, shipped two different JMS products built around its existing SmartSockets software. This performance emphasis, however, did not translate into significant new sales. The company is likely to return to its original middleware products and develop these, rather than continue pursuing the stand-alone JMS market.

TIBCO's JMS middleware

► continued on page 15



If your back-end database isn't a good match for your front-end development, you need a new database. Caché, the high-performance database from InterSystems, is a powerful fusion of today's mainstream technologies: objects and SQL.

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MIDDLEWARE

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was released only late in 2001. TIBCO got the story right. JMS was not going to make or break the company, and there was no pressure to come up with a JMS product for the sake of having one. TIBCO's then head of marketing, Fred Meyer (now chief strategy officer), articulated this view in February 2001 and stuck to it with no apparent downside.

EVERYTHING ELSE

The company that loves to hate all acronyms that start with "J," Microsoft Corp., has steadily been pushing its messaging strategy. A long time ago, Microsoft's MSMQ middleware product was sold as a separate product in its BackOffice software suite. Today, its client MSMQ software ships in every version of Microsoft's Windows from Windows CE to XP. In fact, with the release of Windows XP, Microsoft unveiled MSMQ 3.0. According to the company, the new version offers two new types of messaging: one-to-many and messaging over the Internet. That these features appear only now underscores the strength and weakness of MSMQ: Its strength is it's simple and universal; its weakness is it's simple—meaning it doesn't have the feature set or the track record necessary for true enterprise-scale messaging.

Dave Wascha, Microsoft's product manager for BizTalk Server, observed that enterprises are decreasingly interested with messaging solutions that require programmer action to work.

Wascha related a story of an unnamed customer: "Their developers were delighted to hook up core applications with the new CRM package in just five weeks. Unfortunately, in many of today's enterprises, this just won't work; when you consider that same CRM system might have to hook to ERP applications, databases elsewhere in the enterprise and a variety of other kinds of software, you can't lose five weeks from top programmers with every application that needs to talk to the CRM software."

Of course, he's right. Middleware's fundamental flaw is that it does not abstract to a higher level. As Mike Foody, the founder of Actional Corp. and currently CEO of Venture

Imperatives, pointed out, "It's true. Everyone would love a plug-and-play solution such as Microsoft is touting with BizTalk. The trouble is, that's a pipe dream. The work of integrating applications through messaging is difficult and cannot be raised significantly above a programming level,

even with the best of wizards. Consider for example, [Am-docs Ltd.'s] Clarify's CRM product: It has three separate APIs, and still you have to work hard within these to get done what you need. There is no way to get around these problems, except at the code level."

Obviously, today's fascina-

tion with Web services has certain echoes here, but as yet, echoes only. Consistent with Foody's perspective is the fact that adapters are today's most active segment in the gamut of products termed middleware.

ADAPTERS

This segment of the market

deals with the software that sits between two applications and converts data from one application's format to the other. Adapters are an integral part of EAI and an increasingly central part of middleware at the messaging layer. As large software companies

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position themselves to be enterprise players, the quality of adapters is emerging as a key asset.

Consider, for example, that in October 2001, IBM began the acquisition of CrossWorlds

Software Inc., for \$129 million, in what many analysts agree was primarily a quest to gain ownership of the company's adapters. Companies like webMethods Inc. (www.webmethods.com) and other B-to-B vendors that have written their own adapters are facing terrific competition on the

basis of performance and scalability, and the heart of their problem is the adapter's performance—which is why good adapters are in such demand: They can make or break a product.

One company that has specialized in adapter performance is Actional (www.actional.com).

The company markets adapters that run as native modules on each of the two applications they're linking. As a result, they can do more than the usual transaction and data conversion; they can represent each application to the other as a native module on the network and talk the native language.

This is in clear contrast to typical solutions in this space that use an EAI model, whereby a central server has spokes that connect to every application. The server has an adapter convert the incoming data into a metaformat, then an outgoing adapter converts it into the format of the target system. This means that a data item making a round trip from server A to B is subject to four conversions. Do that on every database transaction and performance will acquire an entirely abstract meaning.

The adapter market is on the verge of moving to a standard API in much the same way JMS unified the messaging market. Sun and the Java Community Process released the Java Connector Architecture in mid-2001 as part of J2EE v. 1.3. (Note: The Java Connector Architecture is not the same as JCA, which is the official acronym for the Java Cryptography Architecture.)

Many analysts believe the Java Connector Architecture will become a universal interface for access not only like JMS, but more in the mold of ODBC and its universal database interface. And like ODBC, it will rarely represent the fastest form of access. Right now, the specification lacks key features such as asynchronous operation, but a 2.0 version of the draft is actively under way.

In the area of adapters, Microsoft's BizTalk Server 2000, one of the early cornerstones of the company's XML initiative, uses a variety of technologies to push data through its large array of connectors and adapters. It uses XML schemas and runs them over HTTP, which allows them to be used in tightly coupled and loosely coupled contexts. Use of HTTP gives the product a ubiquitous transport layer for sites that don't run BizTalk's native messaging layer, MSMQ.

Quite separately, BizTalk supports EDI, which remains one of the few application-specific messaging protocols in widespread use. As usual, last year's predictions that XML would rid the world of EDI were way too aggressive. Infrastructure technologies turn over very slowly. Which is why after all these years, in the world of messaging, MQSeries is still the boss. ■

Meet the Java Developer's Boss

It's the classic midsize enterprise shop: mainframes, minicomputers, Unix and Windows, databases, Web servers. The only new technology is Java. Three years ago, his programmers were experimenting with Java as a cross-platform rapid prototyping language. Today, Java 2 Enterprise Edition has become the company's standard platform for new projects.

That doesn't mean that he's blindly trusting Sun or the Java Community Process. There are a lot of questions surrounding messaging services and the update cycle for the Enterprise JavaBeans specification. And he's not happy with the fact that Sun uses its iPlanet alliance to compete against third-party application server developers like BEA and IBM, because that creates an inherent conflict of interest. It's hard to predict what Sun will do next. Still, the broad industry support behind J2EE has convinced him that the technology is his company's best bet. For now.

His biggest problem is the rapid change of Java-related specifications. New technologies, new approval requirements, compatibility claims — they're flying fast and furiously. That's why the most important part of his job is carefully evaluating and then standardizing on best-of-breed products, partners, and suppliers. There's no way he'll let individual programmers make that type of decision.

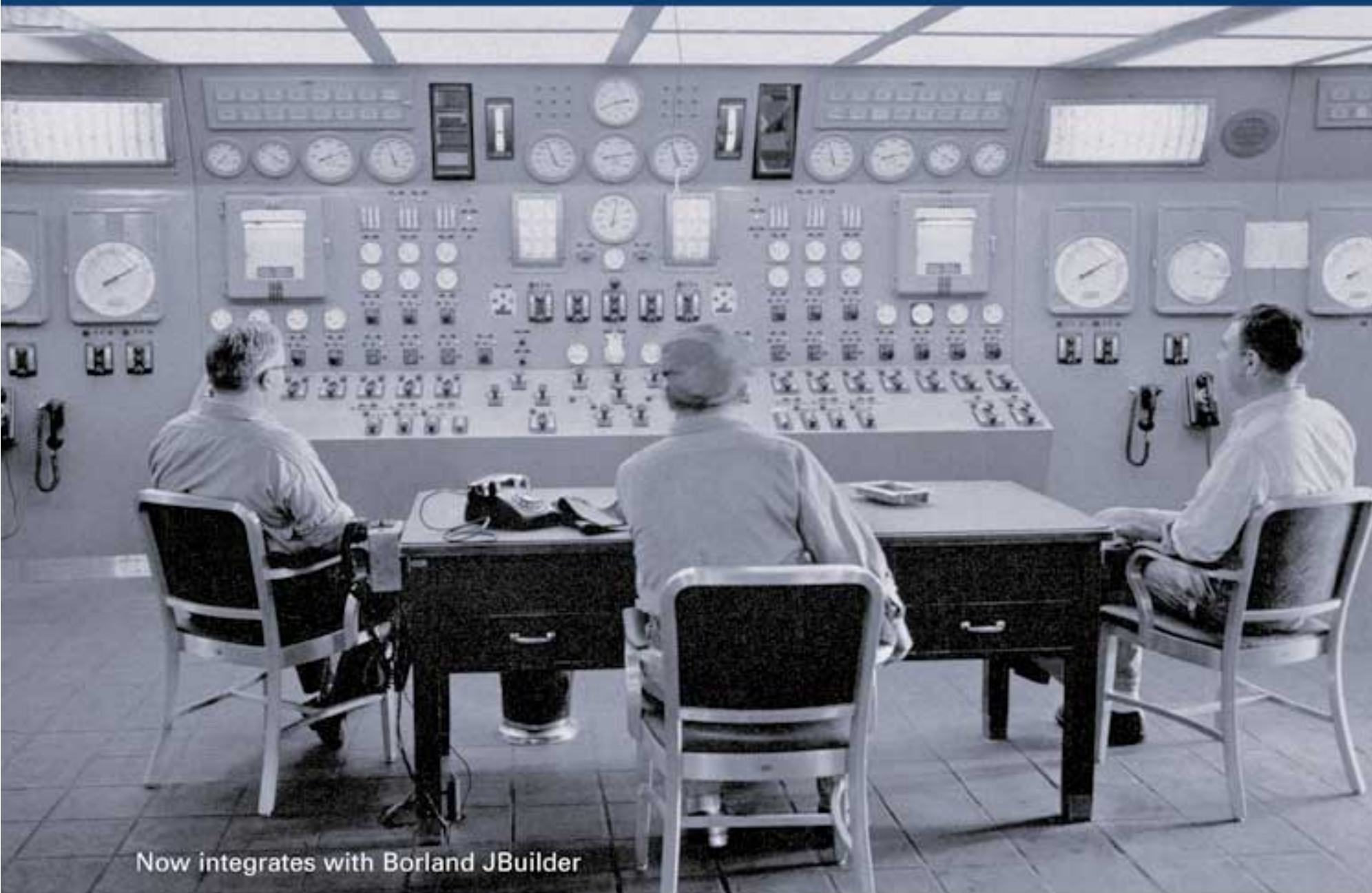
The Java publications? Forget those. He doesn't need reams of source code or tips for choosing the right API calls. He needs a wide-angle view of the entire spectrum of enterprise software development, and a rational, balanced outlook on future Java developments. He needs to know the trends, the products, the alliances, the NEWS, and what it all means. That's why he reads SD Times.

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EDITORIALS

It's All About the Middleware

More than operating systems, more than programming languages, even more than virtual machines, middleware has come to represent the true "platform" of software development. Yet, at the same time, middleware is morphing from discrete products—like BEA's Tuxedo, IBM's MQSeries or Microsoft's MSMQ—into an intrinsic function built into other software products.

Indeed, that transition is nearly complete, at least from the vendor perspective. Tuxedo is largely subsumed into BEA's WebLogic e-business platform, MQSeries is now known as WebSphere MQ, and MSMQ's functionality is integrated into Microsoft's .NET.

Does it matter which middleware package(s) you use? Increasingly, it won't make any difference. For high-performance middleware used within a distributed application, the world is converging on two specifications: Sun's Java Message Service and Microsoft's .NET. Within the JMS world is considerable interoperability, even between competing vendors. Increasingly, third-party message-brokering products will be able to seamlessly bridge the JMS and .NET worlds.

Helping ease that transition will be a set of genuine industry standards. The ability of many new middleware servers to communicate using HTTP and XML, in addition to the proprietary JMS and .NET specifications, lets them act as a foundation for passing messages between applications and across corporate boundaries. As long as none of the major software vendors attempts to subvert those standards with proprietary extensions, the industry will finally enjoy a common middleware infrastructure.

They're Standards. So What?

By submitting its C# and Common Language Infrastructure specifications to ECMA in October 2000, Microsoft scored a huge public-relations coup against Sun, which has been preaching the gospel of openness yet withdrew its submission of the Java language to the same vendor consortium.

In late December, ECMA approved C# and CLI, and it has voted to submit those specifications to the ISO for ratification. While that's good news for the standards process, does any of this have any specific value for customers? Yes and no.

Consider C#. By releasing the language to ECMA (and then the ISO), Microsoft has been forced to do two things: fully document the language, and agree that it won't make unilateral changes to it. This means that other vendors, along with the open-source community, can feel secure enough to develop their own compilers, debuggers, profilers and other tools that work with the C# language. That's good news for developers. But bear in mind that Java and Visual Basic are important languages with hundreds of add-ins and productivity tools, and neither is an open standard.

Consider CLI. The Common Language Infrastructure is a minor piece of Microsoft's Common Language Runtime. It's unlikely that anyone will ever do anything practical with the CLI specifications—except develop for Windows. Although it's a nice gesture that Microsoft submitted its work for peer review, the fact that CLI is now a "standard" shouldn't affect anyone's decision about adopting .NET. ■

GUEST VIEW

A CALL TO ACTIVITY-BASED SCM

Software teams are under more and more pressure to produce systems that are far more complex than ever before, in far less time than was previously imagined and to higher standards of quality. With this pressure, it is increasingly important that many individuals can collaborate to make changes to a software system. Making these changes is as easy as a few keystrokes and the click of a save button, enabling software teams to update an application hundreds of times each day. Teams that operate in this kind of dynamic environment have come to understand the importance of software configuration management (SCM), and the most successful teams have realized a clear competitive advantage by adopting an activity-based approach to SCM.

SCM answers the following questions: What changed? When did it change? Who changed it? Why was it changed? For the most part, SCM tools today do a good job of answering these questions for an individual file. We can compare one file version to another and see what has changed. We can find out when a file was checked in or saved to the repository. We can identify who checked in that file, and try to infer from comments why the file was changed.

What most SCM tools do not do well is answer questions about the entire software system. Was a defect really fixed? Which files were modified to implement a feature? What change requests are in the latest baseline? Activity-based SCM attempts to deal with the issue of "why," facilitating better communication and helping automate some of the error-prone manual labor involved in software development.

Activity-based SCM is very simple in concept. For every change you make to a file or directory, there is a corresponding reason for that change. Not just a comment at check-in time, but a reason driven by your project for making that change. This could be fixing a defect, implementing a new feature, tuning the performance of a component, or satisfying some other requirement. Successful software projects rely on a tool to

track these reasons for change, or "activities." This is done to help prioritize work, including defects, and for other reasons related to the success of the software system being developed. Activity-based SCM simply means tying the changes made to the actual software system files to the explanation of "why" for that change.



BRIAN
WHITE

The majority of software configuration management today is file based. You determine which files to change, check them out, make the modifications and then check in the updated files. The individual changes are not connected to one another, and other than comments, there is no process for managing changes between corresponding files or notifying your team which file versions are ready for inclusion in the next build. This results in broken builds or incorrect versions of files in the application—common sources of undetected and recurring bugs.

The activity-based approach is very similar in that you determine which files to change, but when you check the files out, you indicate which activity you are working on. This ensures that changes move as a single unit into the integration and build process. Also, instead of remembering all the files that developers have checked out and the reason for those check-outs, you can now work at the activity level. For example, when an activity is complete, the developer can automatically check in all the files by checking in the activity and let the SCM tool do the rest.

But this is only the beginning. Individual developers understand the changes being made on a per-file basis, but it is important to identify changes at an activity level so the entire team can understand the changes. Activities are a level of abstraction that can be easily understood by project leaders, testers and customer-support personnel, enabling more effective communication and enhanced productivity.

How many times have you had to answer questions like "Did you fix defect Foo yet?" or "Is the new feature ready for testing?" The power of the activity-based approach becomes particularly visible when config-

uration management is linked directly with change request management (CRM) and project management tools.

Linking change requests to the actual file changes ensures accurate reporting to the entire project team of exactly what defects were fixed and which files were updated. With activity-based SCM, all reports and tools, whether reporting specifically to product managers or the entire product team, display information in terms of the activities rather than the individual files used to make the change.

Another benefit of activity-based SCM is realized when it is used during the creation of component baselines. When done properly, you can compare one baseline with another and receive not only the list of files that have been modified, but also the list of changes (activities) that were made. Testers can then determine for themselves whether a baseline includes an activity or not. Project leaders can easily determine whether a defect has been fixed, not just fixed based on the state in a change request management system, but really fixed in the code.

One final benefit of activity-based SCM is that it can streamline the code-review process. With file-based SCM, a code reviewer has the daunting task of determining which versions of which files should be reviewed. By using information from the packages of changes addressing an activity, an SCM or integrated CRM tool can automatically provide the reviewer the list of files that were modified and also identify the previous version of that set of changes.

An activity-based approach to SCM is superior to the traditional file-based approach. Most activities require modifying multiple files, and an activity-based approach manages all of those changes as a collection. The entire team knows the "why" for each change and there is no confusion about the status or what is in any given baseline. This simplifies configuration management and enables faster development of higher-quality software. ■

Brian White is director of change management solutions at Rational Software Corp.

ALAN WATCH ISLANDS OF ISOLATION

Picture a collection of petty fiefdoms. Territorial squabbles. Teams filled with hostility and a lack of appreciation for others. Groups who won't willingly share intelligence or access to resources. Leaders who work with peers only when compelled to do so by overwhelming external force.

The picture isn't of Afghanistan—it's of the software development department within far too many large enterprises. Excuse me, *departments*. Granted, there aren't Kalashnikovs in this equation (thank heavens), but still the tribal attitude has to go away, and the sooner the better.

Corporate IT has long been divided into factions, each its own island of isolation. The networking department, the WAN department, the PC sup-

Alan Zeichick is editor-in-chief of SD Times.

port department. The main-frame crew, the team that ran the HP-3000, the team that administered Unix servers, the new gods of ERP and CRM. The team that supported HR, those individuals who worship the Oracle database, another group of individuals who boast about DB2. And don't forget the e-mail administrators and the small group that handled EDI and IT purchasing.

Developers are pawns in this bigger game. Some programmers worked as part of those different groups, building databases or main-frame reports. Most were assigned to special development teams, which crafted new business applications for servers. A different group, in some companies, also built native desktop applications, or at least customized Excel spreadsheets or



ALAN
ZEICHICK

Notes templates.

When the Web appeared, companies responded in various ways, depending on their culture, and often by which department moved first to colonize this new domain. In many firms, the Web was a guerrilla effort run out of a line-of-business department, handled by contractors or technologically oriented non-IT staffers. In others, marketing or HR took the lead, or top management became involved—much of that was determined by when in the Web's populist ramp-up the company became aware of its potential.

In some cases, IT was assigned to take care of the company's Internet presence. With most companies that I've talked to, nobody was happy with the results. Certainly IT wasn't happy. Without trained staff, minimal budgets and lacking a proper set of end-user requirements (or even an

understanding of who the end user really was), Web development often began as a barely supported offshoot, lacking any integration to the rest of the company's computing strategy or infrastructure.

Enough of the ancient history. Today, Internet technologies (not necessarily the Web itself) have become the common thread linking disparate parts of the enterprise network. Thanks to the Internet, TCP/IP is the LAN protocol of choice. Most mailers use POP/SMTP, most databases speak ODBC, and Web-based systems administration utilities are slowly supplanting dedicated management platforms. Most large companies put more effort into their extensive intranet resources than public-facing Web sites.

These technological underpinnings served to prepare us for the next step: integration. Between enterprise databases, the emergence of portals and enterprise content manage-

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LETTERS TO THE EDITOR

CAN PALM HOLD OFF MICROSOFT?

In response to your article ["Palm Plans to Create 32-BIT OS," Dec. 1, 2001, page 1, or online at www.sdtimes.com/news/043/story4.htm], I would really like to see this happen. But, given the powerful Microsoft lobby and the rules of the game, which include the inevitable "money talks and bull**** walks," I wonder.

As much as I dislike Microsoft and all the garbage they're perpetrating on the buying public, they have a demonstrated history of being able to own and manipulate markets. Case in point right now is the number of manufacturers that are being targeted by Windows CE. Microsoft wants that market and eventually may have it.

I will begin to hold my breath a little, but I will also be looking for stories of Palm running into the brick walls put up in place to keep competition away from Microsoft's target acquisitions—in this case, the handheld markets.

I'm surprised that Microsoft hasn't yet come right out and announced a hostile takeover of Palm Inc. and its assets. Then, like in the past, they shut em' down, take the code and product, and claim they invented it.

It's the same old story...just a different day.

Jeff Kline

BARRIER TO LINUX

The special report on open-source software ["All's Quiet on the Linux Front," Dec. 1, 2001, page 22, or online at www.sdtimes.com/news/043/special1.htm] did not mention what engineering departments do with Linux. Here, it is used on desktops. We have Sun servers and the target is home-grown. There are also Windows NT desktops. The company will not upgrade the NT systems and doesn't know how it will deal with the end of NT availability. So far they are encouraging us to switch to Linux. They are very upset at Microsoft.

You also didn't mention the artificial barrier that Linux faces on the desktop due to contracts between the OEMs and Microsoft. You might also speculate on what would happen when/if the barrier is lifted. If Linux is not viable on the desktop, why do these contracts still exist?

And you didn't mention Mandrake, which seems to be coming on strong.

By the way, I have recently moved to a Linux desktop (Red Hat), first at work and now at

home, and really like it. I used to run Windows 98 at home. After cleaning up several virus incidents in quick succession and suffering ongoing crashes, I finally had enough. Had Microsoft solved the virus problem, and abandoned the new registration and Passport, I would have bought a new system with Windows XP.

As it turned out, Linux runs well on my current system (a 350MHz AMD K6, 64MB RAM). Now I don't know if I will move back to Windows. Linux is really nice, no problems, no viruses, no crashes, and I saved a lot of money.

Phil Cameron

Crescent Networks

In response to your Linux special report, this reminds me very much of the way folks reacted to Java at first, and when the hype died down, many assumed it was DOA. Java is firmly entrenched as a very serviceable tool for a range of uses, though the original expectations bear no resemblance to current reality.

It takes time for technologies to mature and evolve into their niches. There are many more Linux/Java stories out there, but don't expect the hype-sters to "get it" right away when they finally realize those blips on their radar screens

are not going away.

Jerry E. Spicklemire
Author

WEB SERVICES NOT READY

Excellent column ["Web Services: More Smoke Than Fire," Dec. 15, 2001, page 27, or online at www.sdtimes.com/cols/javawatch.htm]. All my analysis concurs. My latest "State of the Union" report on Web services and J2EE put its prime-time readiness no earlier than the fourth quarter of 2002.

It's important to note that although Web services may be an incarnation of .NET and "The Evil Empire," it is not intended to fill the space on the middle tier. It is a standards movement (an evolution as opposed to a revolution) for B-to-B, so we can still use our favorite enterprise architecture (.NET or J2EE or whatever) and be thankful we don't have to reinvent the wheel whenever we want to talk to one of our cohorts in the industry.

Brent Taylor

Software Architect
EchoStar Communications

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SDTimes

Software Development Times
January 15, 2002 - Issue No. 046

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SUPPLY CHAINS AFTER SEPT. 11

The destruction of the World Trade Center and portions of the Pentagon on that fateful September morning may not immediately have made supply-chain managers worry, but almost everything that followed afterward most certainly did. Consider that nearly all commercial flights were halted for four days, and half of Manhattan was sealed off. Security was tight as a drum in all public transportation locales. Many people, including me, were in a shocked, dysfunctional state of suspended animation. If your company was waiting for a crucial part in order to complete a major order, it had a long wait and a big problem on its hands.

The common and incorrect wisdom that followed from the analysis of the effects of Sept. 11 was that the massive transportation hiccup demonstrated that manufacturers could no longer embrace just-in-time delivery of parts. Just-in-time—I trust you will recall the expression was a term of art long before Java compilers overloaded it—refers to a precept of lean manufacturing. In theory, it suggests that factories that run efficient operations can afford to have parts delivered just prior to their use in the manufacturing process.

By having the parts delivered on so tight a schedule, it is hoped, manufacturers can minimize the inventory they keep on hand.

As John Sharood, president of new ventures at Invensys Software Systems and an acknowledged expert in lean manufacturing, explains, the events of Sept. 11 demonstrated the fragility of transportation systems. However, they reinforced the value of the “lean manufacturing” model, rather than detracting from it. Says he: “The companies that were really hurt were ones with long supply chains or dependent on suppliers who were not using lean manufacturing.”

Here is why. In lean manufacturing, the overarching principle is to design the manufacturing process around the concept of orders of one unique item rather than batches of items. For example, a Mercedes plant in Alabama that uses lean manufacturing runs a succession of different colors and features down its assembly line in response to orders as they come in (rather than as a function of projections). Red car, blue car, white car—in any order.

On traditional assembly lines, cars are batched by color and separated by features (so all the red cars are run through together, but two cars in a row won't have sunroofs—so that the delay caused by adding a sunroof can be caught up across the next few cars.) In the lean model, manufacturers can run all the one-off cars for which they have parts. And if their suppliers are also lean, as soon as transportation resumes

functioning after events like the terrorist attack, they will receive their next shipment of parts. However, if their suppliers are all batch-oriented, now they will receive no parts until a full batch is made. If they need half a batch right away, they must be prepared to spend a lot more for it, if they can get it at all. So, presuming everyone was frozen for the same four days after Sept. 11, manufacturers with lean supply chains were the first to receive parts.

What this example forcefully demonstrates is that for a company to move to lean manufacturing, its entire supply chain needs to be on board with lean manufacturing. If one vendor in the chain is a traditional manufacturer, the delay it causes is propagated and magnified down the entire chain.

Traditional supply chains suffer

massive disruption when calamities occur. If you look at the furthest supplier in the chain, its delay shipping parts causes a somewhat greater delay to the second vendor. The second vendor is dependent on several suppliers, all of whom are late, thereby aggravating the delay it causes the third vendor in the chain. This sequence continues at every step in the chain, resulting in huge disruptions for the consumer at the end of the chain. The premise is clear here: Demand changed after Sept. 11 because of the four-day delay, and the supply chain's ability to respond was compromised because of the same delay.

In contrast, lean manufacturing suffers much less because it does not have to batch product runs; it simply resumes shipping one-offs. Following Sept. 11, only the unavoidable four days were lost. This delay was felt once by all vendors in the supply chain, but was not propagated or magnified. September's events showed that companies that are capable of running the technology necessary to manage a lean supply chain are at a significant competitive advantage. And is it not for this leverage that only technology delivers that you and I work so hard? ■

Andrew Binstock is the principal analyst at Pacific Data Works LLC.

MIDDLEWARE WATCH



ANDREW BINSTOCK

LETTERS TO THE EDITOR

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WEB SERVICES A FIRST STEP

I think Steven J. Vaughan-Nichols' column ["Web Services: More Smoke Than Fire," Dec. 15, 2001, page 27, or online at www.sdtimes.com/cols/javawatch.html] was too skeptical about Web services. Not that Web Services is not a lot of hype. But, Web services is surely the future. It does not necessarily mean it's a new technology; but surely it's going to converge all the heterogeneous software systems under one umbrella. Web services is a first step in standardizing proprietary systems and making information open and public.

Java was intended for small devices and later became a de facto standard for Internet applications. So, although Web services looks like a standard B-to-B or B-to-C application, we, at this point in time, can't say what other applications can embrace Web services.

Raghavendra Chandra

Steven J. Vaughan-Nichols has it wrong when he states "Web services are yet another attempt to run most of an application's bulk at a server/mainframe while the client/terminal handles the presentation level."

While a lightweight and platform-independent RPC such as provided by the XML Web services standards could be used as he suggests, and while despite his claims, there are proven benefits to such an approach (see, for example, Citrix, or

the growth of Curl, the latter documented on page 1 of the same issue of SD Times), connecting application clients to application servers is by no means the only use of Web services, nor the most important use.

The fundamental challenge facing the industry is how to connect the huge and expanding variety of intelligent systems with standard application-to-application protocols. Every system has a specific protocol. Connecting them is an N-squared problem. Web services address that general problem, reducing it to an O(N) problem.

Mr. Vaughan-Nichols' blinkered view of Web services is reminiscent of the CORBA vendors who in 1995 held IIOP close to their hearts while saying in a brave voice, "There's nothing special about HTTP as a protocol." Technically true, this dismissal was blind to the quantum leap enabled by HTTP. The next quantum leap is at hand.

Dino Chiesa

CORRECTION

Segue Software Inc.'s SilkPerformer V load testing software starts at \$50,000 for a perpetual license, including unlimited test runs with a maximum of 100 virtual users per test. Also offered is a decrementing virtual-user license, which costs \$18,000 for 5,000 virtual users that can be deployed in any quantity over a six-month period. The pricing was incorrect in a story in the Jan. 1 issue.

ALAN WATCH

◀ continued from page 19

ment systems, users are beginning to view the computing resources of their company not as separate internal Web sites, but as a single entity. As XML-based integration, driven by .NET and J2EE/JMS servers, begins to link servers and services together, line-of-business managers will be increasingly impatient with having to engage in high-level negotiations just to link different servers together—or more commonly, deciding how to handle an interdepartmental project involving different budgets, different development styles, different tool sets, different cultures, different priorities, different requirements, different vendor relationships and different ideas about how to run a project.

It's not enough to bridge the islands of isolation with interdepartmental working groups or high-level task forces on documentation standards. No staff meeting can cross the chasms or get rid of the "us" versus "them" mentality. It's bad enough when it's developers versus users. But developers versus developers? Forget bridges! The waterways between them must be filled in, turning the whole area into a solid continent.

Unless your organization is atypical, interdepartmental projects are fast becoming the rule, not the exception. That's not a tenable situation. Painful as it may seem, it's time to renormalize

your entire software development department. Excuse me again, *departments*. You need a single organization that encompasses all development work, be it on the AS/400 or Apache server or the portal server. Everyone within the development organization must feel that it's *their* mainframe, *their* Java app server, *their* wireless project. And even if they're using different technologies or tools, the resources that they need should be local, involving participants on the same team, with the same desires, priorities and relationships.

Sound like an attempt to create a bloated bureaucracy? Does this concept go against your culture of decentralized IT? Does it seem too disruptive to succeed? Perhaps so, but decentralized IT can't be integrated. Without integration, you'll be unable to fully benefit from today's software innovations and the potential inherent in Internet technologies. And with internecine wars, integration will never occur.

Embrace change. It will be difficult, requiring hard selling within your many development departments, from programmers to managers and up through the entire corporate hierarchy. Nobody wants to give up what belongs to them or surrender any of their power. But as long as departments think about specific information and technology resources as their own, instead of as parts of a single strategic corporate asset, those territorial squabbles will stand in the way of progress. ■

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DON'T TOSS YOUR COOKIES

In late December, the European Union's Council of Ministers rejected a staff proposal to place extremely restrictive limits on the use of cookies on Web sites. That means that the worst fears of many Web developers won't be realized—European Web sites will still be allowed to use cookies.

In November, things looked gloomy. The proposal that went to the council would have required all Web sites that used cookies to have an advance "opt in" before they could be used. In other words, your users would have had to ask for cookies in advance. You know how likely that would have been.

While there is no requirement that U.S.-based Web providers follow European rules, even if they have users based in Europe, the rules could have been different for companies with European offices. Then, the E.U. could bring pressure to require compliance with European regulations.

However, the rejection of the staff recommendation does not mean that the E.U. won't regulate cookies, because it will. It also doesn't mean that there won't be future restrictions on cookies, because there could be. But for now, Europe's flirtation with cookie restrictions is history.

What is required is that Web sites

that use cookies disclose that fact, and in sufficient detail so that users will know exactly what cookies will be transferred to their computers, which ones will remain behind, and what information will be used by the cookies and for what purpose. In other words, the E.U. is requiring information similar to what's required in the U.S. for privacy statements. The biggest difference is that to meet the European regulations, you must also have a means available on your Web site to allow users to opt out of cookies if they don't want to receive them.

The next question, of course, is: How does this all affect you? Depending on your company, the answer could be complex, and in some cases you might want to call the folks in the legal department as a sanity check.

However, here are some general guidelines.

First, if you're a U.S. company, and your Web servers—all of them—are based outside of Europe, then the E.U. rules won't affect you. While the European Union would very much like to control the details of Internet access everywhere European users might go, it can't. That was demonstrated in court earlier this year when the government

of France went after Yahoo because some items on an auction site violated French laws against selling Nazi paraphernalia. A California court tossed the case out because France doesn't have any control over U.S. firms operating in the U.S., even when they're patronized by French citizens.

On the other hand, if you are a U.S. company with operations in Europe (even a sales office), then you must comply with European laws, at least for any operations you have there. So, if you have Web servers in Europe, they must follow the European rules. A few years ago, a French Web server for an American university in Europe was forced to have pages in French as well as in English to satisfy French laws on language use.

If you're a company located outside of both the U.S. and Europe, then you'll need to check things out where you are, but it's a reasonably safe bet that you're insulated from European laws.

So does that mean you don't have to disclose your cookies? Well, sort of. You may not be required to, but if you have a large percentage of European users, you might want to meet the E.U. guidelines anyway. The reason is that your European customers will expect to see those disclosures, and may not want to visit your site if it doesn't have them.

WEB WATCH



WAYNE RASH

IS CORONA THE REAL WEBTV?

While Microsoft wasn't showing it or drinking any in the booth at its InternetWorld show in December, Corona—the code name for the next generation of Microsoft's Windows Media services—was the big discussion topic. Due to a tremendous onset of SCB syndrome (Sudden Clinical Boredom), I had to flee the sadly tiny show floor prior to my in-person briefing with Microsoft, but I still managed to get some phone time with Brett O'Rourke (group program manager) and David Coulton (lead product manager of the Windows digital media division) who were gracious enough to walk me through the new technology.

Corona is Microsoft's play into the next generation of streaming media via the Web. To that end, parts of Corona are already on their way within the guts of Windows .NET Server beta 3, and additional elements will arrive sometime this year, including all-new codecs, a new encoder, a new player and, most important, new SDKs. Microsoft isn't being bashful as to where Corona is supposed to lead us, either.

Coulton clearly indicated that Microsoft is looking for nothing less than an equivalent to television and Corona is the first step. According to Coulton and O'Rourke, this means examining three of today's streaming elements. First,

buffering—instead of the usual 7-to-10 second delay between pressing play and seeing a stream, Microsoft claims that Corona will eliminate the buffering delay entirely.

According to Coulton, that's because current players assume much slower connection rates than 300Kbps and force themselves to assume a slower buffering speed as a result.

Microsoft seems to think most folks have bandwidth of 300Kbps (or above) and has rewritten its player to take full advantage. The results of this strategy will have to wait until the beta period, though Redmond seems quite confident in saying that the combination of the player and the new codecs will also enable DVD and even HDTV-quality streams at much lower data rates and with increased overall throughput.

The elimination of significant buffer delays brings us to our second key TV challenge: Corona developers will be able to present content in a manner that appeals to channel surfers. Similar to clicking across 100 cable channels with your "Star Trek" phaser remote, users will be able to mouse-click across long lists of available video streams since there is no delay between play and the actual experience. I'm thinking

client-side browser crash, but Coulton and company assure me the technology will work.

And to support all these channel surfers, we come to our third point: XML-based server-side playlists. Until Corona, developers basically wrote playlists as a list of URLs in text format, each individually accessed by the player. Corona changes this by placing the playlist into a continuous stream not only allowing the user to switch channels without breaking the underlying streaming connection, but also allowing developers to dynamically modify the playlist even during the experience. This creates dynamic streaming content that can be based not just on entertainment value, but also on personalization or demographic data specific to the user. When I see this work, I'm going to be extremely impressed.

After this epiphany, Coulton and O'Rourke regaled me with lots of techno-sheet style performance data concerning the new players and the upcoming codecs. (The existing codecs have been upgraded in XP, but there are even better ones coming down the pike.) Instead of focusing on that, however (you can find all that information in upcoming white papers on Corona at www.microsoft.com/windows/windowsmedia or by sending

The problem, of course, is figuring out what's required by the European Union. Fortunately, one of the organizations that were involved in the successful fight against the E.U.'s cookie ban was the Interactive Advertising Bureau UK. This group, which consists of British Internet advertisers that would lose millions if the cookie ban actually happened, maintains a description of the current state of the European requirements on its Web site (www.iabuk.net). There's an official statement of the current status in the organization's Press Centre, as well as additional information on that and other E.U. Internet initiatives, including the more recent E.U. decisions dramatically restricting e-mail advertising.

So for now, the cookie concerns are mostly over. Yes, you might have to disclose your cookies to your users, but that shouldn't be a problem to most businesses. The mood among customers these days seems to angle for full disclosure anyway, and by doing so, your business will appear to your customers to be forward-thinking. Your European customers will be happier. You can report to your CIO that you were responsible for making your company appear forward-thinking and keeping your customers happy. Where's the downside? ■

Wayne Rash is a technology journalist and consultant.

me an e-mail), what really struck me as being important to developers is Microsoft's heavy dependence on third-party ISVs to make Corona work. Basically, Corona's core is a robust plug-in architecture that's just waiting for third-party innovations—especially content.

Corona contains more than a thousand new APIs supporting eight different plug-in types. These plug-ins address data path issues (how content is sourced, moved, parsed and converted) as well as control plug-ins, data and user "authorizers," event notifiers and even an advertising plug-in to allow for more advanced demographics. The platform supports seven different languages comprising C/C++, C#, Visual Basic.NET, VBScript, Perl and JavaScript. I even asked about Java, but O'Rourke came back calmly and informed me that as long as you can compile it into a .DLL, Corona can support it.

Aside from Windows .NET Server, we won't be seeing much of Corona until at least the middle of 2002. But when it does arrive, Redmond assures us that not only will the core technology be unveiled, but significant third-party add-ons will be ready to go, too. I can't wait to see it. ■

Oliver Rist is a freelance technology journalist and vice president of technology at AIC Inc.

WINDOWS WATCH



OLIVER RIST

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WEB SERVICES: FOR REAL

At first, I took Web services to be just more marketing drivel. But, underneath the hype, there really is a new and much easier way to do network programming and also make existing legacy network applications more approachable without having to bleed all over your interface code.

Microsoft, with its Visual Studio.NET programming package and .NET servers, is widely regarded as the Web services leader. Actually, it's not.

Web services aren't really about a new programming package or a new language, C#. The name of the Web services game is deploying network services using SOAP (Simple Object Access Protocol), a lightweight message format that works over a distributed, stateless environment, aka the Internet. SOAP also encodes the standard data types—Boolean, byte, dateTime, decimal, double, float, int, long, short and string—so that any operating system or program that speaks SOAP can exchange data and run Web services programs.

Backing up SOAP is another pair of open standards. UDDI (Universal Description, Discovery and Integration) serves as an operational registry (read Yellow Pages) for Web services. Each Web service is defined by WSDL (Web Services Description Language), which describes what it does and how it is accessed.

That's it. If your application server, or a SOAP interpreter sitting in front of your application server, can handle these three standards, you're ready to start programming Web services.

In essence, Web services let you create loosely coupled network services that don't require your application programmers to have to sweat one set after another of hard-wired network APIs to deliver network service A to application B or browser C. HTTP, XML and SOAP become your transport, messaging and presentation layers.

At first, Web services will be used within a company or within its partnership extranet. They'll replace EDI and EAI applications and then take over other internal business network applications and be deployed to handle other business processes. I don't see Web services generating much revenue in the consumer space anytime in 2002. Web services, despite all the headlines Microsoft's Passport and .NET My Services will get in the popular press next year, will find its primary market in offices, not homes.

Of course, having the right tools will help a lot. Your developers could write their own XML APIs and the like, but luckily for you, several companies are

already delivering J2EE-based Web services servers and tools.

Oddly enough Sun ("The Network is the Computer") is running behind the other J2EE vendors. The company's Java XML Pack promises to be an all-in-one Java download for all things related to Web services. That would be great, except few of the components exist yet.

Look at the JAX Pack (<http://java.sun.com/xml/downloads/javaxmlpack.html>), which includes the important JAXP (Java API for XML Processing) and JAXM (Java API for XML Messaging), which together support SOAP 1.1.

What's missing? JAXB (Java Architecture for XML Binding), which will compile an XML schema into Java classes; JAX-RPC (Java API for XML-based remote procedure calls), which will let you incorporate RPC into SOAP 1.1; and JAXR (Java API for XML Registries), which will provide access to UDDI and ebXML directories.

I don't expect to see the complete set until late spring. But that doesn't put them all that far behind Microsoft. Of all of Microsoft's Web services tools, only Visual Studio.NET is likely to be shipping by then.

But that still doesn't help you today. What can help you are BEA, HP, IBM and Oracle.

BEA is shipping WebLogic Server

6.1, which already includes SOAP and Web services support.

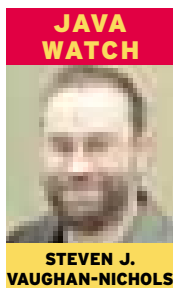
HP, after taking a brief dead-ended side trip to e-Speak (www.e-speak.net), which is now an open-source project with little HP support, has turned its attention to delivering Web services. This will be done with the Web Services Platform (Web servicesP), which lets you use Web services with HP's Application Server, Internet Server and Web Services Platform Developer Edition, which HP calls the successor to e-Speak. Web servicesP will also work with most of the app server family, including the VisualCafé plug-in.

For my money, though, I like what IBM is doing with WebSphere most of all. Its Web Services Toolkit, while still a beta from IBM alphaWorks, is very impressive, and works with WebSphere 4.0.

Oracle's 9i JDeveloper is a bit more primitive than the others with its XML support. Frankly, even if I were going to use Oracle9i for my DBMS engine, I'd be inclined to use BEA's tools.

To be honest, I can't recommend any of these for production code yet. Even the best of them have a ways to go. But, let me reiterate, so does .NET. ■

Steven J. Vaughan-Nichols has been writing about technology for more than 15 years and also has worked as a programmer for NASA and the Dept. of Defense.



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PUTTING DEVELOPMENT IN CONTEXT

In its relatively brief history, software development has evolved from being driven by individual coders to a more collaborative process that brings in business and marketing representatives. Indeed, some of the new "agile" processes, such as Extreme Programming, actually require that end users and customers be brought into the development life cycle at the design stage.

Karen Holtzblatt, president and co-founder of InContext Enterprises Inc. (www.incent.com), believes developers need to go the next step and get out into the field to understand how customers and end users actually work to gain the insight necessary to complete a project successfully.

Holtzblatt calls the process "contextual design," which she described as a front-end process of conceptualizing the project, designing it and considering how to implement it by understanding how the customer will use it—"everything before you start coding," she said.

"Many projects end up failing because they don't match the work processes of the end user," she said. "IT would develop something, toss it over the wall to marketing and say, 'Sell it; it's cool.' But they have learned you can't change the product concept at the tail end."

An example she gave of a poorly conceived product is the picture phone, which allows callers to see the party on the other end of the line. "The picture phone," she explained, "required that you stand in front of a camera, that you not move more than an inch or two to the left or right, and that you be dressed. But that didn't match up with how people want to use the phone. We have 25-foot cords for walking all over the

kitchen; we have cordless phones that we use in the bathroom when we're not altogether dressed."

The first step in contextual design, Holtzblatt said, is putting together a cross-functional team of designers, developers, marketing and business people and customers, so everyone gets a shared understanding of what is to be accomplished. A work model is then generated to characterize and give a coherent view of the project. The team then matches the customer's business goals with technology capabilities in what she called "the vision stage."

Next comes the design stage, where structure, function and flow are considered, and then paper mock-ups are taken into the field to see how the project might change based on how it is used in the real world. "This is where the usability and the product concept come together," she said.

Contextual design as defined by Holtzblatt flies in the face of what has come to be accepted as team collaboration during the engineering phase of the project. "Collaboration divides the project into pieces, but by carving up applications and identifying people with certain parts of the project, you get wasteful overdesign and overfunctionality of the pieces," she said. "We want to keep the team together for a greater overview, so they can see how their piece fits into the whole project." It's like the person who created bullet boxes for Word documents, she said. There are stars, checks, bullets, arrows, boxes—any host of designs and sizes for bullets—when all the end user wants is a quick way to highlight something in text. The person creating the bullets, she said, came to think of himself solely as a bullet design-

er and lost the high-altitude view of the project to understand how his piece fit into the overall way people would use Word documents.

While this sounds fine and good, there will be resistance to implementing this type of design regimen. Coders, quite simply, are coders; they are not sociologists and anthropologists concerned with the way people work. Although the industry is a relatively young one, cultures do exist, and it is only human nature to resist changing the way we do things.

While pointing out that the industry has begun to embrace some revolutionary notions, such as collaboration, modeling and bringing non-IT people into projects at earlier stages, she did acknowledge that it's difficult to get people to change their everyday habits. "Some of it is historical," she said, "as the industry moves from toymaker/hacker/'Isn't this cool?' to professional engineers. It takes growing up to realize living in chaos isn't fun."

She did say, though, that when she took some IT folks into the field, one reacted by saying he felt as if he had been working behind a one-way mirror. "It's so transformative from an attitude standpoint," she said. "We're right on the edge from the point of view of asking the question 'What will make a difference to users?' You're looking for new corporate value, how to make things and services that people want and can use."

With all types of change, though, come costs. Training people to work differently, changing their culture, will take a toll both monetarily and psychologically. But citing studies that show only one of 10 product concepts actually ships, she said the cost of not changing could be even greater.

Remember the picture phone. ■

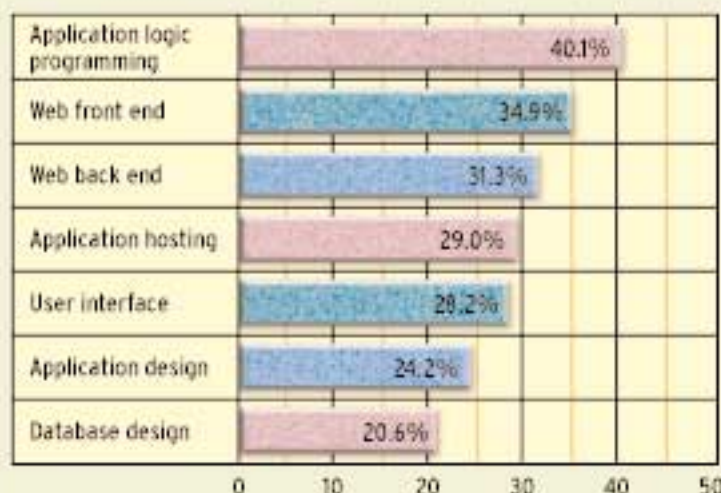
David Rubinstein is executive editor of SD Times.

INDUSTRY WATCH



DAVID RUBINSTEIN

Which Development Tasks Are Being Outsourced?



During the past year, companies turned their attention away from e-commerce and Web applications, and began focusing more tightly on infrastructure and systems integration. This change is reflected in the Winter 2001 Enterprise Development Management Issues survey, which revealed that application logic is now more likely to be outsourced than Web front-end site development—a shift from 2000.

While the outsourcing of application logic has remained constant at around 40 percent of cases, Web design is now being outsourced in about 35 percent of cases—down from 52 percent last year.

Interest in outsourcing application design has increased, from only 15 percent in 2000 to 24 percent in 2001.

The survey also shows that external application hosting is used by 29 percent of respondents, down from 32 percent a year earlier.

Source: Enterprise Development Management Issues, Winter 2001 © Evans Data Corp.
www.evansdata.com

BUSINESS BRIEFS

Security software vendor **Symantec Corp.**'s two-for-one stock split, scheduled for Jan. 17, will increase the number of outstanding shares to more than 140 million. Symantec's stock was added to the **Nasdaq 100 Index** effective Dec. 24. . . . Middleware company **XML Global Technologies Inc.** has formed a subsidiary to acquire **Bioluminescence Solutions Inc.**, a consulting company focusing on technology and security initiatives. Tim Ruggles, founder of Bioluminescence, will serve as president of the new security subsidiary, which will focus on law-enforcement initiatives, and will take a 15 percent ownership stake in it. As part of the deal, XML Global will transfer its Xtract recovery technology for stolen property to the new subsidiary. . . . Systems integration solution provider **TIBCO Software Inc.** announced fiscal-year 2001 revenues increased 27 percent from the prior year, reaching \$319 million, up from \$252 million in FY 2000. Pro forma earnings for the year were \$16.9 million, or 16 cents per share. The company showed a loss of \$54.7 million, or 7 cents per share, when amortization, restructuring and other charges are factored in. ■



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New York, IDG WORLD EXPO
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| Wall Street On Java Technology
New York, LIGHTHOUSE PARTNERS INC. & FLAGG MANAGEMENT INC.
www.javaonwallstreet.com | Feb. 4-5 |
| Python Conference
Alexandria, Va., FORETEC SEMINARS
www.python10.org | Feb. 4-7 |
| PalmSource Conference & Expo
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www.palmsource.com | Feb. 5-8 |
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www.sqe.com/sm | Feb. 11-15 |
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| Internet Appliance Workshop
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INTERNET APPLIANCE WORKSHOP
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Santa Clara, Calif., NT MEDIA GROUP
www.imgevents.com/wireless | Feb. 19-21 |
- Information is subject to change. Send news about upcoming events to events@bzmedia.com.

Meet the .NET Developer's Boss

Last week, she finished looking at the betas of Visual Studio.NET and other portions of Microsoft's .NET strategy. It's not perfect, but it'll do. She's been successful in reducing the number of deployment platforms in the server room to three: Windows, HP-UX, and AS/400. Although Linux and J2EE have a lot of potential, the CIO agrees that for now, it makes more sense for her team to continue following the Microsoft track to leverage huge investments in software, training, and code.

But that doesn't mean that she blindly follows Redmond's advice. Windows and COM+ are only two pieces of a very complex puzzle. Her department still has a lot of programmers who know Visual Basic 6, and she has no intention of retraining them to use C# or C++, or forcing them to abandon Delphi, JBuilder, or Rose. Somebody has to be the voice of reason and it can't be the individual programmers, who care more about cool interfaces and not enough about component reuse and cross-project standards. That's why she controls the checkbook.

What does she read? Not the Visual Basic or code-centric programming magazines. They're too hung up on the latest technical details; immersing herself in SOAP APIs won't help her manage a 40-person software team. Not Web sites. MSDN is great for explaining Microsoft's newest buzzword, but doesn't provide the balanced big-picture view she needs. She needs to see it all: all the vendors, all the languages, all the platforms. She needs to know the trends, the products, the alliances, the initiatives, the NEWS, and what it all means. That's why she reads SD Times.

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